



# CAN WE COMPETE?

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# Can we Compete?

GERMANY'S ASSETS IN FINANCE, TRADE,  
EDUCATION, CONSULAR TRAINING, Etc

AND A PROPOSED

## British War-Cost Reduction Programme

By

G. E. MAPPIN

Author of "The Hidden, (*i.e.* German) Danger"



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*Publishers to His Majesty the King*

TO  
GWLADYS

*Land of our Birth, we pledge to thee  
Our love and toil in the years to be,  
When we are grown and take our place,  
As men and women with our race*

Father in Heaven Who lovest all,  
Oh, help Thy children when they call ;  
That they may build from age to age  
An undefiled heritage

Teach us to bear the yoke in youth,  
With steadfastness and careful truth ;  
That, in our time, Thy grace may give  
The truth whereby the Nations live

Teach us to rule ourselves alway,  
Controlled and cleanly night and day  
That we may bring, if need arise,  
No maimed or worthless sacrifice

Teach us to look in all our ends,  
On Thee for Judge, and not our friends ,  
That we, with Thee, may walk uncowed  
By fear or favour of the crowd

Teach us the strength that cannot seek,  
By deed or thought, to hurt the weak ;  
That, under Thee, we may possess  
Man's strength to comfort man's distress

Teach us delight in simple things,  
And mirth that has no bitter springs ;  
Forgiveness free of evil done,  
And love of all men 'neath the sun

*Land of our Birth, our faith, our pride,  
For whose dear sake our fathers died ,  
O Motherland, we pledge to thee,  
Head, heart and hand through the years to be '*

RUDYARD KIPLING

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## PREFACE

THE Author, having studied at two German Technical Universities, worked in and visited German works, and made the acquaintance of numerous German Diplomats, Officers, Officials, Professors, Business Men and Workmen, publishes this book in the hope that, like Arminius, who, after living in Rome, destroyed the Roman Legions under Varus by employing Roman methods and discipline against their originators, he may be one of the means of showing to his fellow-countrymen the strength of their enemies and some methods for ensuring their defeat.

G. E MAPPIN.

*Ingatestone, Essex,  
July, 1918.*

## INTRODUCTION

THE following chapters contain definite proposals for co-ordinating the five groups of interests, national and individual, which constitute our Economic Life, viz.: Agricultural, Industrial, Commercial, Labour and General. The spirit of reform pervades all men's minds at the present time; but if the majority of people were asked what were the actual details of any proposed reform, they would be at a loss for a reply. This, the following essays will, it is hoped, be able to supply. There have already sprung up a good number of leagues and associations to promote various reforms, and they will probably increase, so that there will ensue overlapping and breaks in the chain of organization, unless some scheme is put forward, giving a direction to the whole movement. We must first define the School of Economy, which is at the foundation of all our views, political, national or class. In order to understand the trend of events, a short history of English Political Economy and some of its *practical* lessons is followed by a series of essays on various reforms. The views expressed are those of the New-Mercantile School, which have steadily been gaining ground since about 1870, and have received a tremendous impetus through the action of the war.

*The relations of the five groups of interests to each other are shown in the chart at the end of the book. A practical programme of reforms, based on these essays, is given in Appendix I.*



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Chart, showing relative position of the five National Interests:—

Agriculture  
 Industry  
 Commerce  
 Labour  
 General . . . . .      *At the end of the book*

# CAN WE COMPETE?

## CHAPTER I

### POLITICAL ECONOMY

*Mercantilism* (Middle Ages, to about 1800).

DURING the Middle Ages the Guilds of Craftsmen held sway in most European countries. Their influence, however, commenced to decline about the beginning of the eighteenth century. These guilds were all-powerful; they decided what numbers of apprentices should be employed, and the length of their indenture. They saw to it that their technical education should be long, thorough and compulsory. Since all employers and workmen were compelled to belong to these guilds, the standard of efficiency was well maintained. In those days masters and men belonged to the same class; after a certain number of years the apprentice became a workman, and, later, a master. There was no class

distinction such as exists to-day. As long as our population and its needs were small, and the means of communication few and difficult, the guilds were able to cope with the situation. Their regulations were legalized by the Statutes of Queen Elizabeth, which remained in force, though with diminishing rigour, till about 1814, when they were finally repealed, as were similar measures on the Continent. The invention of machinery, the rise of factories, the improvement in means of communication, the increase in population and its needs, and the desire for greater freedom in trade, all combined to sign the death-warrant of Mercantilism or Rule of the Guilds.

*Adam Smith and Individualism, 1760-1870.*

The time was now ripe for the rise of the Physiocrates, or the school of the "Rule or Reign of Nature." This school was opposed to all artificial restrictions on trade. Hitherto men had acted in communities; now it was to be each man for himself. The father of this doctrine was Rousseau, who had started the movement by his famous book, "The Social Contract," published about 1762. His ideas were popu-

larized in England by Adam Smith, who had come under his influence, whilst living in France. Smith wrote his great work, "The Wealth of Nations," which was soon translated into various languages, and created a profound impression. "Away," he cried, "with all restrictions on trade. Each man must be free to bargain with his employer as he pleases. If he is not satisfied with his wages, he will be able to apply elsewhere, without being bound by irksome restrictions. We want no factory inspectors to restrain the number of hours a man may work; let him labour as long as he wishes. My ideas will not bring about industrial war, but peace and harmony. Let nature rule! Whoever and whatever survives is fittest."

His admirers say that his views hold good for all time, regardless of the general levelling up of the nations, and the improvements in communication, education and processes of manufacture throughout the world. We must not forget that in those days we stood in a very different position compared to other countries than we do now. We had already adopted the factory system, and were producing cheaply and rapidly; we were masters of the seas, and possessed, for the times, good inland communications. We

were the manufacturers for the world. Abroad, the position was very different. Germany, as late as 1800, had no less than three hundred inland tariffs ; the workmen were not permitted to leave their birth-place, and the *corvée* still existed, as it did in France (till 1789). No wonder, then, that Smith's views were hailed with delight. His idea was, that Britain should become the workshop of the world, and that the other nations should send their raw material, to our shores, to be returned in the shape of manufactured articles.

For some time work in England was so plentiful that there was enough for all, but soon abuses began to appear. The considerate employer was compelled, against his will, to reduce the wages of his workmen, in order to be able to compete with his rival, who sweated his men ; the workman found that if he did not accept any wage the employer chose to offer, it meant starvation. Till about 1846, the Government forbade the men to coalesce, owing to the idea that by restricting their right to work for any wage they liked (which a Union would not permit), it would be bad for the country, and for the men themselves. Shocking conditions existed in the cotton mills and in the coal mines, where

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even children six years old were employed. The Report of 1840 on Mines and Factories makes horrible reading.

It was truly "a survival of the fittest," the result of adopting the Anarchists' principle: "Each man shall be a law unto himself."

### *Economic Reform (since 1870).*

The Government soon saw that it must cease acting merely as policeman against outside attack, while it left a welter of industrial anarchy within. Contrary to Smith's doctrine of *laisser-faire*, it appointed factory inspectors, restricted the hours of labour, and allowed the workmen to organize themselves. Abroad, things had not come to such a pass as in England, but similar legislation became necessary.

Other nations found that their young and struggling industries were being killed by our competition, so they decided to protect them by tariffs, railway rebates, and reduction of taxes (till the young industry was able to bear its fair share of the burden of state), and by other means. They no longer wished for nothing better than to remain agricultural states, whilst we manufactured for them (and made the

profits). They considered that the time had come for them to create industries of their own.

The New-Mercantile School of Economic Thought is characterized by Imagination and Humanitarian considerations. We may say that the Classical School was pre-eminently individualistic and materialistic, which was not very surprising, seeing that so much of its origin was founded on Pure Reason. The teaching of the old school influenced the late Georgian and early and mid-Victorian styles of Architecture, Furniture and trend of Religious Thought. Its practical teaching was summed up by the words : " You cannot make a man sober by Act of Parliament." This led in a natural manner to the doctrine that you cannot alter a man's (or boy's) attitude of mind. This was followed logically by a refusal to teach Patriotism, Citizenship and Political Economy in National Schools, thus doing nothing to give the working classes some " answer for the political faith that is in them," and making smooth the path for Socialism and Political Ignorance, which might lead to a Revolutionary Spirit. The decline of the doctrines of Adam Smith coincided with the birth and growth of co-operative movement amongst the

Churches, the workers, the States of the Empire, and a more imaginative conception in the style of furniture, architecture and dress.

It was realized that Patriotism *could* be taught, Model Towns for the workers planned out (instead of being left to grow up of themselves), and that compulsory Technical and Continuation Schools were beneficial to the Community.

In a word, the old School, with its materialistic outlook and rather gloomy mode of life, gave way to a more vigorous and buoyant *régime*, convinced of the possibility of improving men's minds and social conditions.

The Historico-Ethical School has successfully combated the theories, amongst others, that :

- (a) There is a "natural" price for goods based on the assumption that
  - (1) The cost of production in industry is governed by the cheapest producer, whereas it is really governed by the dearest producer, whose goods are required to satisfy the demand.
  - (2) There is a "natural" or "proper" wage to be paid to the workman.
- (b) There is a fixed amount of money in a country, to be allotted as payment

to the workmen (therefore, the more workmen there are, the less they should be paid), a theory disproved by the greater increase in the number of workmen than of other classes, and the continual rise in their wages, and other facts.

- (c) The fixed living wage theory, that is, that there exists a natural living wage upon which a man can just exist and no more, and about which the actual wage fluctuates—a theory which was one of the chief causes of the birth of Socialism.

### *Competition v. Co-operation.*

In certain quarters competition is held to be the breath of business life, while restricted output is considered as a dangerous limitation of individual rights. The following facts may show that what was sound policy in 1850, no longer holds good to-day.

From 1800 to 1850 the markets could absorb all the goods produced; then took place the movement towards coalition amongst the masters and men, and a gradual filling up of the markets. From 1890 onwards there has been, generally speaking,

"complete saturation" of the markets, so that a firm can only expand to any great extent at the expense of other concerns. This brought about the gradual rise of Cartels and Combines.

*Restraint of Trade.*

In order to reduce ruinous competition, the law should be so amended as to allow employers to coalesce for purposes of limiting competition and to enforce their agreements in the courts.

## CHAPTER II

### TECHNICAL UNIVERSITIES

### A DEFINITE PROGRAMME

IT may be said that the cause of our slow development in Technical Education is the lack of support of public opinion. Under present conditions, it is not too easy to discover from a perusal of a good number of the prospectuses published, not only by Universities, but by other Training Institutions, what is *actually* taught in their programmes. Added to this is the general ignorance of the high standard attained in foreign Universities and Colleges. If we are to hold our own in the coming industrial struggle, we must reorganize our technical training on scientific lines.

It is proposed to show of what the actual courses in Architecture and Engineering at a first-class German University consist. This will afford an easy means of comparison with that of our own, and will show how urgent is the need of reform.

The year is divided into two sessions, Summer and Winter. The course is four years. A certain amount of latitude is allowed in the compulsory subjects to suit each individual case. Each lesson is fifty minutes in length, and commences at ten minutes past the hour.

#### ARCHITECTURE

It is advisable to spend eight weeks in practical work before commencing the course.

Before taking the honours examination, one year must have been spent in practical work (eight weeks in the case of the diploma).

	HOURS PER WEEK.					
	Winter Term		Summer Term			
	L	D	L	D	*	
<i>First Year</i>						
Higher Mathematics . . . . .	3	2	3	2		
Descriptive Geometry . . . . .	4	6	4	6		
Technical Mechanics	3	2	3	2		
Experimental Physics .. .	4	-	4	-		
Principles of Chemistry . . . . .	-	-	4	-		
Construction of Private Buildings (I) . . . . .	1	-	1	-		
General History of Art .. . . .	4	-	4	-		
Ornamental Drawing. . . . .	-	6	-	6		
Surface Buildings (I) . . . . .	3	3	3	3		
Buildings of the Ancients. . . . .	2	-	1	3		
	24	19	27	22		

\* L=Lectures D=Design.

	Hours per Week			
	Winter Term		Summer Term.	
	L	D	L	D
<i>Second Year</i>				
Practical Geometry .....	2	-	-	6
Construction of Private Buildings				
(I) .. . . . .	-	3	-	3
Statics of Surface Buildings (I.) ..	1	-	-	3
Do do (II.) ..	-	-	2	-
Buildings (I) .. . . . .	2	-	2	-
General History of Art .. . . . .	4	-	4	-
Buildings of the Ancients .. . . .	-	3	-	-
Italian Renaissance .. . . . .	-	-	2	-
Churches (I) .. . . . .	3	-	-	-
Churches (II) .. . . . .	-	-	4	-
Painters' Perspective .. . . . .	1	-	-	-
Figure and Landscape Drawing ..	-	6	-	6
Mechanical Technology (I) .. . . .	2	-	-	-
Ornamenting .. . . . .	-	3	-	3
Modelling of Ornaments .. . . . .	-	3	-	3
Upkeep of Monuments .. . . . .	-	2	-	2
	15	20	14	26

<i>Third Year.</i>				
Foundations .. . . . .	2	-	-	-
Surface Buildings (III) .. . . .	2	3	2	3
Dwelling Houses .. . . . .	2	-	2	-
Decorating .. . . . .	1	-	1	-
Planning .. . . . .	-	6	-	6
Buildings (II) .. . . . .	2	-	2	-
Planning of Buildings .. . . .	-	8	-	8
Building Materials .. . . . .	1	-	-	-
Churches (III) .. . . . .	2	6	-	6
Italian Renaissance .. . . . .	-	3	-	-
General History of Art .. . . . .	4	-	4	-
Water-colour Painting .. . . .	-	3	-	3
Ornamenting .. . . . .	-	3	-	3
Principles of Electricity .. . . .	-	-	2	-
Principles of Law .. . . . .	2	-	-	-
Upkeep of Monuments .. . . . .	-	2	-	2
	18	34	18	31

	HOURS PER WEEK			
	Winter Term		Summer Term	
	L	D	L	D
<i>Fourth Year</i>				
Surface Buildings (II )	2	-	-	-
Planning	-	6	-	6
Decorating	-	3	-	3
Dwelling Houses (I )	2	-	2	-
Decorating (II )	1	-	1	-
Planning of Buildings	-	8	-	8
Contracting	1	-	1	-
Churches	-	6	-	-
Stairways	-	3	-	-
Town Planning	-	-	2	3
Iron Construction in Buildings	2	3	-	-
Water-colour Painting	-	-	-	3
Figure Drawing	-	4	-	-
General Machinery	3	-	-	-
Elements of Bridge Building	2	-	-	-
Elements of Water Turbine Build-				
ing	-	-	3	-
<i>Principles of National Economy</i>	2	-	-	-
	15	33	9	23

The following lectures are recommended during the course :

*During the First and Second Years*

Descriptive Geometry

Geology, Mineralogical Laboratory, Machine Drawing

Literature and History.

French and English

History of Music and Drama

*During the Third and Fourth Years*

Selected Chapters on the History of Art.

Artistic Handicraft.

French and English

Literature and History

Extracts from Law and National Economy.

History of Mathematics.

## CIVIL ENGINEERING

One year's practical training is required before taking the honours degree (eight weeks for the diploma).

	HOURS PER WEEK.					
	Winter		Summer.		L	D
	L	D	L	D		
<i>First Year.</i>						
Higher Mathematics . . . . .	6	4	5	3		
Descriptive Geometry .. . . .	4	6	4	6		
Mechanics (I) . . . . .	-	-	6	-		
Experimental Physics . . . . .	4	-	4	-		
Chemistry . . . . .	-	-	4	-		
Drawing.. . . . .	-	2	-	-		
Surface Buildings..... . . . .	3	3	3	3		
Private Dwellings..... . . . .	1	-	1	-		
	<hr/>	<hr/>	<hr/>	<hr/>		
	18	15	27	12		

	Second Year					
	Winter		Summer.		L	D
	L	D	L	D		
Higher Mathematics (II ) . . . . .	2	1	-	-		
Geodesy . . . . .	4	2	4	10		
Mechanics (II ) . . . . .	6	2	-	2		
Hydraulics . . . . .	-	-	2	-		
Geology . . . . .	4	2	2	2		
Surface Building . . . . .	-	3	-	-		
Sections of Stone .. . . . .	-	-	1	1		
Machine Elements . . . . .	2	3	-	-		
Engineering Buildings . . . . .	-	-	2	-		
Mechanical Technology (I) . . . . .	2	-	-	-		
Architectural and Freehand Drawing . . . . .	-	3	-	3		
Building Material. . . . .	1	-	-	-		
	<hr/>	<hr/>	<hr/>	<hr/>		
	21	16	11	18		

	HOURS PER WEEK			
	Winter		Summer	
	L	D	L	D
<i>Third Year.</i>				
Statics of Building Construction .	4	{ 6	3	{ 6
Reinforced Concrete . . . . .	-	} 2	-	
Railway Construction . . . . .	3	5	-	-
Roads . . . . .	-	-	2	4
Foundations . . . . .	2	-	-	
Bridges (I) . . . . .	1	-	-	
Bridges (II) . . . . .	-	-	2	{ 4
Water Supply of Towns . . . . .	2	-	-	
Drainage of Towns . . . . .	-	-	2	
Water . . . . .	-	-	3	-
General Machinery . . . . .	3	-	3	-
Drawing of Building Machinery ..	-	3	-	-
Engineering Surface Buildings...	-	-	2	-
Design of Surface Buildings	-	3	-	-
Geodesy . . . . .	-	-	-	{ 2
<i>Principles of Law</i> . . . . .	2	-	-	-
<i>Principles of Electricity</i> . . . . .	-	-	2	-
	<hr/> 17	<hr/> 17	<hr/> 21	<hr/> 18

*Fourth Year*

Railways (II) . . . . .	2	4	-	-
Railways (III) . . . . .	-	-	3	4
Railways (IV) . . . . .	2	-	-	-
Bridges (I and II) . . . . .	-	4	-	-
Bridges (III) . . . . .	3	-	-	-
Bridges (IV) . . . . .	-	-	3	-
Exercises in Bridges (III and IV.) and in Reinforced Concrete ..	-	6	-	6
Water (II) . . . . .	3	6	-	-
Water (III) . . . . .	-	-	3	6
Water (IV) . . . . .	2	-	-	-
<i>Principles of National Economy</i> . .	2	-	-	-

*Also for Third and Fourth Year Students**HYDRAULIC ENGINEERS*

Chosen Extracts.. . . . .	1	-	1	-
Water Laboratory . . . . .	-	3	-	3
	<hr/> 15	<hr/> 23	<hr/> 10	<hr/> 19

	HOURS PER WEEK			
	Winter		Summer	
	L	D	L	D
B RAILWAY ENGINEERS				
Chosen Chapters . . . . .	-	-	2	-
Practical Experiments in Railway Technology . . . . .	-	-	-	2
	<hr/>	<hr/>	<hr/>	<hr/>
	14	20	11	18
C MUNICIPAL UNDERGROUND ENGINEERS				
Chosen Chapters . . . . .	1	-	1	-
	<hr/>	<hr/>	<hr/>	<hr/>
	15	20	10	16
D IRONWORK ENGINEERS				
Chosen Chapters . . . . .	1	-	1	-
	<hr/>	<hr/>	<hr/>	<hr/>
	15	20	10	16
E REINFORCED CONCRETE ENGINEERS				
Reinforced Concrete . . . . .	2	-	-	-
	<hr/>	<hr/>	<hr/>	<hr/>
	16	20	9	16

Subjects which are recommended to be heard during the first and second years of the course :

- Descriptive Geometry
- Physical Laboratory.
- Mechanical Technology (in summer)
- Testing Material
- General History of Art.
- Drawing and Painting
- Literature and History.
- French and English
- Theory of Optical Instruments

Subjects which are recommended to be heard during the third and fourth year courses :

- Averaging of Calculations
- Higher Surveying.
- Ironwork of Surface Building
- Town Planning*
- General Electricity
- History of Art.
- English and French.
- Principles of Law
- Industrial Politics
- Testing of Material

For Railway Engineers .

- Principles of Telegraphy and Telephony
- Electrical Railways.

## MECHANICAL ENGINEERING

At least one year spent in practical training in a works is required before obtaining a degree.

	HOURS PER WEEK.			
	Winter.		Summer	
	L.	D.	L.	D.*
<i>First Year</i>				
Higher Mathematics (I)	6	4	5	3
Descriptive Geometry (I)	4	6	4	6
Mechanics (I)	-	-	6	-
Experimental Physics	5	-	5	-
Chemistry	4	-	-	-
Mechanical Technology (I)	2	-	2	-
Machine Drawing	1	3	-	3
	22	13	22	12
<i>Second Year</i>				
Higher Mathematics (II)	2	1	-	-
Practical Geometry	-	-	-	4
Mechanics (II)	6	-	-	-
Mechanics (III)	-	2	-	2
Hydraulics	-	-	2	1
Machine Parts	4	8	4	8
General Machinery	3	-	3	-
Construction of Buildings	2	-	-	6
Kinematics	-	-	2	-
Theory of Heat	2	-	-	-
General Electricity	3	-	3	-
Physical Laboratory	-	3	-	3
Industrial Politics	-	-	2	-
	22	14	16	24
<i>Third Year</i>				
Cranes (I)	2		-	
Cranes (II)	-		2	3
Steam Engines and Turbines	6	3	-	
Pumps	-	-	4	6

\* L=Lectures D=Design.

	HOURS PER WEEK			
	Winter.		Summer	
	L	D	L	D
Gas Motors . . . . .	3	3	-	3
Machine Tools (I) . . . .	2	3	-	3
Machine Tools (II) . . .	1	3	-	3
Mechanical Engineering Laboratory (III) . . . .	-	-	-	3
Electrical Laboratory . . .	-	3	-	3
Materials . . . . .	1	-	-	-
Statics of Building Construction..	4	3	3	3
Mechanical Technology . . .	-	-	2	-
<i>Principles of Civil Law</i> . . .	2	-	-	-
Iron and Steel Works Machinery..	-	-	2	-
	21	18	13	24

*Fourth Year*

Water-power Engines . . . .	4	6	-	6
Indirect Regulator (Water Turbines) . . . . .	-	-	1	-
Water-power Stations . . . .	2	-	-	-
<i>Factory Planning</i> . . . .	-	-	2	-
Paper-making Machinery . . .	3	-	-	-
Boilers . . . . .	-	-	2	3
Conveyors . . . .	1	-	1	-
<i>Machinery Planning</i> . . .	-	6	2	6
Steam Engines and Turbines . . . .	-	-	-	-
Mechanical Laboratory (I) . . .	-	-	-	3
Mechanical Technology (II) . . .	1	-	-	-
Principles of Locomotive Construction . . . .	-	-	3	-
General Railway Machinery . . .	-	-	2	-
Drawing (Locomotives and Gas Motors)	-	3	-	3
Bridge Building (III) . . .	3	3	-	-
Power Transmission . . .	2	-	-	-
Mechanical Laboratory (V) . . .	-	-	-	3
Heating and Ventilating . . .	2	-	-	-
<i>Political Economy</i> . . .	2	-	-	-
Steel and Iron Works . . .	1	-	-	-
Principles of Telegraphy and Telephony . . . .	-	-	2	-
	21	18	15	24

It is recommended to take the following subjects during .

(a) *The four year course* Literature and History, Geology, History of Music, Socialism and the Formation of Society, and the Nation's Income

(b) *The first and second years* Descriptive Geometry (II ), Exterior Ballistics, Repetition of Mathematics, French and English, Chemical Laboratory, Practical Geometry, Machine and Ornamental Drawing, Roundhand Writing

(c) *The third and fourth years* Selected Details of Machine Parts, Costing, Geometry of Movement, Chemical-Technical Laboratory, Chemical Technology, Reinforced Concrete, Book-keeping, Patent Law, *Protective Measures against Accidents to Workmen*, *Selected Portion of Law*, Railway Management, Experiments in Pickling of Metals, *Banking*

### ELECTRICAL ENGINEERING

One year spent in practical training in a works is required before obtaining a degree.

	HOURS PER WEEK.			
	Winter.		Summer.	
	L	D	L	D.*
<i>First Year.</i>				
Higher Mathematics		6	4	5 3
Descriptive Geometry ..		4	6	4 6
Mechanics (I ) . . . . .		-	-	6 -
Physics . . . . .	5	-	5	-
Physics Laboratory . . . . .	-	-	-	6
Inorganic Chemistry	4	-	-	-
Mechanical Technology ..	2	-	2	-
Machine Drawing . . . . .	1	3	-	3
	22	13	22	18
<i>Second Year.</i>				
Higher Mathematics (II ) . . . . .	2	1	-	-
Mechanics (II ) . . . . .	6	3	-	-
Hydraulics . . . . .	-	-	2	-

\* L=Lectures D=Design.

	Hours per Week			
	Winter		Summer	
	L	D.	L	D
Pure Kinematics . . . . .	-	-	2	-
Theory of Heat . . . . .	2	-	-	-
Physics Laboratory . . . . .	-	3	-	-
Electrical Laboratory . . . . .	-	-	-	6
Construction of Buildings . . . . .	2	-	-	6
Machine Elements . . . . .	4	6	4	6
General Machinery . . . . .	3	-	3	-
General Electricity . . . . .	3	-	3	-
Measurement of Electricity . . . . .	-	-	2	-
<i>Industrial Politics</i> . . . . .	-	-	2	-
	22	13	18	18

*Third Year*

Cranes (I) . . . . .	2	3	-	-
Water-power Machines . . . . .	-	-	- } 6	-
Steam Engines and Turbines . . . . .	6	3		
Steam Boilers . . . . .	-	-	2	-
<i>Machine Planning</i> . . . . .	-	-	2	-
Pumping Machinery . . . . .	-	-	4	-
Machine Laboratory (I.) . . . . .	-	-	-	8
Gas Motors . . . . .	2	-	-	-
General Electricity . . . . .	3	2	4	2
Measurement of Electricity . . . . .	2	-	-	-
Construction of Electrical Machinery . . . . .	3	3	3	3
Electric Light and Power Stations . . . . .	-	-	2	-
Principles of Telegraphy and Telephony . . . . .	-	-	2	-
Electrical Laboratory . . . . .	-	2-4	-	2-4
	$\frac{1}{2}$ days		$\frac{1}{2}$ days	
	18		19	

*Fourth Year.*

Water-power Plant . . . . .	2	- } 6	- } 3	-
Steam Engines and Turbines . . . . .	-			
Machine Planning . . . . .	-	-	-	-
Indirect Regulators (Water) . . . . .	-	-	1	-
Belting . . . . .	2	-	-	-
General Electricity . . . . .	2	2	-	2

	HOURS PER WEEK			
	Winter		Summer	
	L	D	L	D
Electric Waves . . . ..	2	-	-	-
Wireless Laboratory . . . ..	-	-	-	$\frac{1}{2}$ day
Construction of Electrical Ma- chinery . . . . .	-	3	-	-
Electrical Light and Power Plant .	2	2	-	2
Electric Railways . . . ..	2	-	-	-
Electrical Laboratory . . . ..	-	2-4	-	2-4
	$\frac{1}{2}$ days		$\frac{1}{2}$ days	
High Tension . . . . ..	1	-	1	-
High Tension Laboratory . .	-	2	-	-
Principles of National Economy	2	-	-	-
Theoretical Electricity .	-	-	2	-
	<hr/>		<hr/>	
	15		4	

The following subjects are recommended to be heard :

(a) *During the whole course*

Literature and History  
 History of Mathematics  
 Geology.  
 History of Music.

(b) *During the first and second years*

Descriptive Geometry (II )  
 Repetition of Elementary Mathematics  
 Chemical Laboratory  
 English and French

(c) *During the third and fourth years* .

Chosen Extracts on C/C and A/C  
 Electric Drive of Hoists and Industrial Machines  
 Practical Geometry  
 Statics of Building Construction.  
 General Railway Construction  
 Electric Waves and Undulations.  
 Water-power Machines.  
 Law  
 English and French.

It is not suggested that this programme should be copied *en bloc* by our institutions, but it serves to show how much leeway we have to make up. At any rate, it can be employed as a useful guide.

### *A Practical Prospectus.*

To rouse public interest in Technical Education, it is necessary to put the training scheme clearly and lucidly before the reader. In place of the present method of drawing up prospectuses, the following is suggested. The various items should be arranged as below : A summary of the year's events as affecting the University (or College) ; a list of the Staff, followed by the courses of study (Architectural, Engineering, etc.), *grouped together*, as given above ; next thereto a synopsis of the subjects taught, each subject being numbered for reference in the synopsis and in the course ; a table of fees, etc. The grouping together of the courses enables the prospective student to see at a glance what is taught in *each* course.

*The Financial Position of the Universities.*

It may be urged that lack of funds is the obstacle to progress. The whole country should be divided into groups of Counties. Each group should be empowered to levy a University Rate sufficient to raise a sum of money which, in the opinion of the Board of Education, is required to maintain an efficient University. New Universities should not be founded unless this sum is forthcoming. Existing Universities should have their faculties reduced if they have not sufficient means to endow these faculties in a proper manner. Whenever possible, the matter should be left in the hands of the Municipality, County (or group of Counties), as local patriotism is a potent factor in developing University life. On the other hand, the Imperial Government should ensure the maintenance of *one* standard of education, the best, by withholding the right to grant first-class degrees, until its regulations have been complied with. The entrance examinations and courses should be interchangeable, co-ordinated and synchronized, so as to allow students to go from one to the other (Oxford and Cambridge would not enter this Convention).

University reform carried out along these lines would raise our Technical Teaching to the level of that of the foreigner, without restricting the initiative of the individual Universities.

## CHAPTER III

### COMMERCIAL UNIVERSITIES AND COLLEGES

COMMERCIAL Training is too often confined to what may be termed the lowest class accomplishments; *i.e.*, Shorthand, Book-keeping and Typewriting. Added to this is the general lack of knowledge as to what Higher Commercial Training supplies, and the difficulty of utilizing in England highly-trained Commercial men in the ordinary run of business affairs. In a later essay it will be shown how they may be profitably absorbed into the business life of the nation. The aim of this chapter is to depict what is actually taught in a first-class enemy Commercial University or College.

Reference has been made in Parliament to the proposed improved training of our Consuls, in which it was stated that the prospective Consuls would attend classes at one or other of our Technical Universities. It is precisely the Commercial courses given at these institutions which need improving;

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otherwise our future Consuls will go out insufficiently equipped from the point of view of Commercial and Economic Training as compared to the German.

The difficulties under which our Universities labour in this respect are largely due to the lack of funds and the want of public knowledge as to the high standard required. This the following facts propose, in a measure, to supply.

Mr. Cust's report on Business Training Facilities in our country shows conclusively that it is impossible for any considerable number of Students to obtain the training given, not only in Germany, but also in France and the United States of America.

We must make a clear distinction between Higher and Elementary Commercial Training.

In Germany there are six Commercial Colleges or Branches of Universities, in which a Training Course of about two years in length is provided.

In the six Commercial Universities, in 1913, there were 7,637 Students, of whom 2,063 were women.

Training in Commerce is on a different basis to that in Industry. For that reason, many Students take a Course in special subjects, which may only extend over one

or more terms (of six months each). The fees charged at one of these Colleges are as follows :

Entrance fees for Germans, 30s. ; for foreigners, £5 ; Minimum yearly fees, £12 10s. and £25 respectively.

Besides the ordinary subjects included in all Business Training, special attention is paid to the "Technique of Commerce" and to the practical aspects of Political and National Economy.

The "Technique of Commerce" endeavours to depict the practical side of business in a comprehensive manner. It ministers to the individual interests of Industry and Commerce, as opposed to the general standpoint held by National Economy. National Economy stimulates interest in National Problems. It shows the young Student, from the bird's-eye point of view, the relative positions of Agricultural, Industrial, Commercial, Labour and General Questions.

"Technique of Commerce" looks rather from below to the heights above, and supplies the complement to the Practical Training received in actual business offices.

It is a relatively new subject, and may be characterized as a study of various phases of commercial life, such as Banking, Book-

keeping, Tariffs, Railway Freights and their relations to one another. These subjects form the basis of lectures and debates by various outstanding personalities in the Banking, Industrial and Commercial world. These special lectures form part of the curriculum of the various Commercial High Schools in Germany, under the title of Economic or Commercial Seminaries, e.g., that of Cologne.

The facts given below are set out at some length, in order to give an accurate idea as to the amount of training provided, as a mere generalization would be useless.

The following extracts from the course are worth attention :

*Book-keeping and Commercial Science*

Detailed Instruction on Organization of Needle, Belting, Automobile and Shoe Factories, of a Light Railway Company, also of a Russian Wheat Exporting Company

Criticisms of the various Book-keeping Systems

Book-keeping of Syndicates, Groups, etc.

Technique and Value of Secret Book-keeping

Closure of Accounts, and Profit and Loss in Companies

Different Systems of Double Book-keeping

Temporary Items, and their Manner of Booking Up

Special Cases from Actual Practice

Depreciation

Book-keeping in Shipping Firms

Dealing in "Futures" in Wheat.

Communities of Interests (*Interessengemeinschaften*).

Scientific Shop Management (Taylor's System)

Principles of Industrial Costing

*Banking*

The Overseas Business of the German Banks

The Fluidity of the Balances of Co-operative Societies

The Influence of Cartels on the Development of Austrian Banks

Financing of British Industry, and the Relationship of Banks to Industry in England

The Banks in China

Organization of a New York Banking House

Discounting of Bills on Inspection of Books (*Buchforderung*)

The Share (Issue) Office of a Great Bank

The Central Prussian Lending Banks

*National Economy*

Lectures at Berlin are given on :

Teltow Canal

Cartel Movement in the German Cement Industry

Cartel Movement in the Elbe River Traffic

Representation of Commerce and Industry at the Prussian District Councils

Laws against Usury

National Economy is spread over four sessions (two years)  
 The numbers signify the lecture hours per week during one or more of the sessions

Introduction to National Economy .. . . .	3
History of World Commerce and Traffic .. .	1
Means of Communication and Politics thereof ..	2
Post and Telegraphs, Cables, etc .. . . . .	1
Commercial Politics .. . . . .	2
German National Economy and "World Politics" ..	1
German Tariff Policy (Past and Present) .. .	1
German Tariffs .. . . . .	2
Selected Problems of Modern Colonial Policy .. .	1
Banks and Exchanges .. . . . .	2
Modern World-Commerce .. . . . .	3
Money .. . . . .	1
Technique of Banking and Exchanges .. . .	2
Conservation of Natural Sources of Production and Agricultural and Industrial Politics .. . .	2
Large Industries and their Latest Problems (Cartels and Trusts) .. . . . .	1

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Social Questions . . . . .	2
Prevention of Accidents to Workmen and their Welfare . . . . .	1
Finance (including a review of the present financial position of the Great Powers) . . . . .	2
Statistics . . . . .	2
Autocracy, Liberalism, Communism . . . . .	1
Aims and Importance of the Middle-Class Movement . . . . .	1

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Even a mere glance at this formidable programme proves conclusively the *utter inadequacy of the Commercial Training provided at our Universities, and shows what drastic reforms are needed, if our Consuls and Business Men are to compete successfully with their foreign rivals.*

## CHAPTER IV

### THE REFORM OF OUR CONSULAR TRAINING

(*To be read in conjunction with Chapter III.  
—“Commercial Universities”*)

IT is generally admitted that our Consular Training stands in need of considerable improvement. An outline of its reform was given in Parliament on the 27th of February, in which it was stated that the prospective consul would take a course of Commercial Instruction at one or other of the Technical Universities, Leeds being suggested as suitable.

A perusal of the programme of Higher Commercial Training at Leeds, or, indeed, at any British University, shows that a drastic extension and improvement is necessary, involving considerable expense, before we can hope to attain the high standard of our enemies.

In order to give the Public a correct idea of what is expected in the matter of Consular Training, and so to induce them

and their Parliamentary Representatives to willingly provide the funds necessary for the revised scheme of instruction, an exact description of German Consular Training is given below.

The Commercial Course at Cologne University, for instance, is supplemented by a large number of excursions during each year, of which a list follows. Further, a Debating Seminary is attached to this University. A selection of some of the subjects discussed follows the list of excursions. The prospective consul takes portions of this course.

List of Excursions from Cologne University during one year to :

Two Experimental Farms.

Cotton Mill.

Water Power Station.

Cologne Harbour.

Telephone Exchange and Post Office.

Schimmelpfeng Information Bureau (the Commercial Spy Headquarters).

Lignite Mine and Brickett Works (Brown Coal).

Liège Exhibition.

Machine Tool Works.

Steel Works.

Two Coal-Mine-Steel Works (" Mixed Works ").

Two large Manufactories, a Colour and  
a Sugar Factory, etc.

The Debating College, during the year,  
discussed :

The Importance of the Copper Market to  
Germany.

Position of the Copper Market in U.S.A.

The Copper Trust.

The Prussian Central Co-operative State  
Bank (on which are based practically  
the whole of Germany's 35,000 Co-  
operative Societies).

The Lime and Sandstone Industry on  
the Rhine.

The Siegerland Iron Industry.

The Russian Iron Tariff and Industry.

German and American Machine Tool Con-  
struction, and the American Compe-  
tition (thereof) in Germany.

The Potash Syndicate.

Chilian Saltpetre and Germany.

Criticisms on Socialism.

The Renewal of the Rhenish-Westphalian  
Coal Syndicate and the Development  
of Mixed Works.

The Growth of the German-Chinese Trade.

The Development of German Stock-  
Raising (1873-1900).

*Consular Training.*

The German Consul, after leaving his Public School, studies three years at a University, and passes a preliminary legal examination. He next spends about four years in legal work or in the Civil Service. He then passes a higher legal examination. He is now eligible for a nomination. On obtaining this, he is sent to a Consulate for two years to learn the language, etc., or passes a special Consular Examination.

He next spends about two years in the Foreign Office, chiefly in connection with Commercial Politics and Shipping. After about a year, he must pass an examination in French and English. During or after these two years he undergoes an extensive scientific and practical training in Commercial Science in a Commercial College or University. To this is joined, whenever possible, a short period of employment in a bank, and the visiting of industrial undertakings. He should also be present at the sittings of some Chamber of Commerce. Satisfactory results are obtained from his attending the lectures, etc., of the Society for Extension Courses on Statecraft. [See below.]

At the termination of the two years in

the Foreign Office, the candidate is appointed Vice-Consul under a Consul. In this capacity he usually remains some six years, the last part of this period as an independent officer. He is then made full Consul. As regards age, he would pass his higher legal examination at twenty-five or twenty-six, and then spend two years abroad, two years at the Foreign Office, and some six years as Vice-Consul. He would be about thirty-six before becoming a full Consul.

An increasing number of Consuls are admitted into the German Diplomatic Service, which thus attracts a good class of man into the former.

*The Society for Extension Courses on Statecraft.*

This Society, founded in Berlin, holds two sessions a year. The following is a programme of one of them (four months in length).

Lectures and Debates :

- (1) to (3) Legal Questions ; (4) Land Act ;
- (5) Questions of National Economy, chosen by the speakers ; (6) and (7) National Economy ; (8) The Prussian Budget ; (9)

Local Finance ; (10) Agrarian Politics ; (11) Legislation for the Protection against Accidents to Workmen, and of the Surroundings of Factories ; (12) Workmen's Insurance ; (13) Political and Economic Tendencies of the Expansion of the Great Powers ; (14) The Chinese Treaties ; (15) Colonial Policy ; (16) Comparison of the Various State Banks of the World ; (17) Stock Exchanges ; (18) Railways and Freights from the National Standpoint ; (19) Prussian State Railway Administration ; (20) Practical Statistics ; (21) Poor Laws and Welfare ; (22) Social Hygiene, Drainage, etc.

Debates are held during six hours every week in addition to the lectures. Various excursions were made to the port, etc., of Bremen and elsewhere. Two special lectures were given for the public by Professor Schmoller (who wields an influence akin to Cobden) on "The Victory of Free Trade" (1776-1875) and the ensuing Reaction towards Mercantilism.

This imposing programme shows one of the means by which Germany obtained so great a hold on the world's trade before the war. In the words of a noted Frenchman, Professor Hauser : "Even if Germany should lose the Military, she may yet win the

Economic War." To prevent her, we must reorganize our Consular Training in a really scientific and thorough manner, though not necessarily to the extent to which Germany has gone, if we are to avoid in our Consular Education the mistakes committed in our Education Acts of 1870 and onwards, viz. : unsuitable and insufficient training.

## CHAPTER V

### HOW TO AVERT THE ULTIMATE DECLINE AND FALL OF OUR PUBLIC SCHOOL SYSTEM

A STUDY of the history of education of the chief European countries reveals the fact that the monasteries (the guardians of knowledge throughout the Middle Ages) rose, flourished and then declined; the last phase being brought about by their inability to adapt themselves to changed conditions. Foreign "Public Schools" were absorbed by the State.

A stay of several years abroad in France, Spain and Germany (following my English education), during which I studied at two French Lycées and two German Universities, with a period in Spain, has convinced me that nowhere in these countries, and probably in the world, can one find a class of boys to equal those hailing from our first-class Public Schools, both in regard to development of character, and to the general adherence to high ideals.

As to the amount of knowledge, however,

that has been acquired by the average lad of the same age, when leaving Public School, Lycée or Gymnasium, the advantage seems to lie on the side of the foreigners.

What steps must we take to remedy this state of affairs, and yet be able to maintain those splendid traditions in our schools that are one of the most important factors of their system ? These traditions inculcate into the future administrators and rulers of our subject races, into our future naval and military officers, as well as into those destined for other walks of life, the spirit that has endowed us with these qualities by which we have earned the reputation for being the most efficient leaders of men throughout the world.

What must we do in order to prevent these cherished institutions from getting out of touch with the spirit of the times and of becoming merely the training ground for the affluent and the aristocratic—a pretext which would serve in the hands of a democratic Government for their absorption by the State ? State education with regard to instruction and the inculcation of knowledge, may have many real advantages, but everyone who has had any personal dealing with French Lycées or German Gymnasia will bear witness to the

undoubted blemishes which State higher education carries in its train. This transformation, however, when once completed, would render nugatory all efforts to maintain private, as opposed to State, tuition.

There is no shutting our eyes to the fact that there is a very large number of parents who are extremely dissatisfied with the education received by their sons in our Public Schools. The Government has already commenced training its naval cadets from an early age, in order to improve the imperfect education received by many of our officers; it may extend this to the Army and Consular and Civil Services. It is unnecessary to recall the numberless cases of boys turned adrift into the world, after having received a Public School training, who become gentlemen-unemployables.

The outcome of the present conditions will often be that Public School men, whose parents were comfortably off, will find that their lives are unsuccessful. Should they in their turn become fathers, they will remember their perfunctory Public School education, and with the experience of years will judge, and judge rightly, that that is the cause of their ill-success. They will say that they would like their sons to go to a first-class Public School, to become

imbued with the old traditions and with the ideals that make the English gentleman without an equal among the nations of the world; but that they cannot afford it—the instruction does not fit a man for the present-day battle of life, etc.

Hence, only the very affluent will patronize these institutions, which will become more and more out of touch with the times, and thus will afford the excuse for the dreaded absorption by the State.

Now the following plan may perhaps save the situation. The chief stumbling-blocks to Educational progress are the inability of the parents to find out what should definitely be taught in a definite career, their inability to co-operate with one another, and the impossibility for those head-masters who are fighting for the cause of reform to call to their aid the large body of parents who would undoubtedly respond if they were able.

The waters of our secondary education flow, at present, in any direction they will, sometimes limpid and clear over great depths, and at others sluggish and shallow through a morass. The idea is that they should run in a definite direction and between walls—walls that would be low and very far apart, but still—walls.

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We should strive for the following ideals:

All Public and Private Schoolmasters should undergo a course of pedagogy, or the art of teaching, when commencing their career.

In his first year of school life, a boy should study certain subjects of a given standard of difficulty; his second and further years' training should be in logical sequence to his first. A boy goes to school to acquire information; it is only in after-life that he is expected to rise above his fellows. Our present system is suited to the needs of the exceptionally gifted; but what about the others?

Our Public Schools should co-ordinate their curricula in order to allow of boys who are compelled for various reasons to change their school to continue their studies without too great a break. This does not mean that the entry to one school should admit to another.

Further, there should be four series of classes, as in France: A, B, C, D, varying from the pure classical (A) to pure modern (D). Each series should be equal in standard to the others. The curricula should be decided by a committee of educational experts, appointed by the Headmasters of the leading Public Schools, who would issue,

from time to time, a list of approved books to be read during the following year, or till the publication of a fresh list. Various authors would, of course, be allowed on each subject, in order to give opportunity to masters for exercising their private judgment. The entrance examinations to the public schools should be standardized and equalized, and made interchangeable, *i.e.*, if passed at one, would allow of entry to another, subject to conditions as at present existing.

The Public Schools would be divided, if necessary, into divisions, in the first of which would be placed the most famous, which are linked indirectly to one another by social ties ; similarly with the second and other divisions.

Entrance examinations of the first division would only be interchangeable amongst the schools of the first division. Similarly with the other divisions.

These suggestions, suitably modified, would be applied to the Private Schools, and extended upwards to work in conjunction with the Universities.

Now how are these aspirations to be realized ? By the formation of a league with a definite aim as the object of its propaganda.

Its tenets would be the proposals adumbrated above ; its funds would be employed in the payment of experts, who would draw up curricula suited to the requirements of the different professions and walks of life. Negotiations would be opened with the Public Schools, especially with those whose financial position was somewhat uncertain, as well as with the Universities and Private Schools. It would be probable that some would approve of the League's propositions, the more so, as the latter's monthly journal would advertise this fact. Should this scheme meet with but scant response, the League would proceed to obtain funds. To do this, it would issue fifty-pound and one-hundred-pound shares bearing interest. It would acquire old Private Schools, or build new ones, and found one or more Public Schools. These buildings would be leased to masters on low terms, on the condition that they fell in with the propositions of the League. This would afford scope to their personal initiative, without which the idea would fall to the ground. Parents who had taken up shares would be charged only ninety per cent. of the fees if they placed their sons in these schools. The rents demanded of the masters would cover dividends, depreciation (two per cent.

on capital, outlay on new buildings, and a higher percentage on old ones), etc. The yearly sums placed to the reserves would be five per cent. of the profits, until they reached ten per cent. of the capital.

The present Public and Private Schools would soon find that their new competitors would undermine their position, and they would fall in with the views of the League.

Thus we should forestall the State, and rob it of any real excuse for taking over Secondary Education. We should reap the combined advantage of private enterprise, coupled to an all-powerful supervision.

It should not be forgotten that schools exist, in the first place, to make our boys good Christians, good citizens of our Empire, and efficient workers in life, and only in the second, to be lucrative enterprises in the hands of their owners.

## CHAPTER VI

### COMPULSORY TECHNICAL EDUCATION AND FACTORY OR WORKS SCHOOLS

SOME time ago one of our leading statesmen criticized the evening classes of our Continuation and Technical Night Schools with the words that in them were “tired pupils, taught by tired teachers, inspected by tired inspectors.” It is proposed to reform the system as at present maintained; but unless the public have some concrete ideas as to the manner in which our competitors are taught, we run a risk that the efforts of the reformers will be restricted, with the result that little *real* progress will be achieved. The programme of study similar to that given below is in use in a German Works School, maintained by a firm of engineers with two thousand to three thousand hands, for the benefit of their apprentices. These “Works Schools” have the advantages (1) that less time is lost by the boys in going to and fro between the works and the school (often held in the works itself) than in visiting the Municipal School; (2) that

the teaching is more practical than that given in the latter, and more closely allied to the requirements of the particular firm in training apprentices who will in time probably enter its services as workmen. The Works Schools are maintained by individual firms, either singly or conjointly. Paid teachers are placed at their head, and have as assistants members of the staff of the various firms. The course is three years in length, with an additional year for those apprentices who are indentured for four years. The course extends over forty weeks per annum. The hours per week are six, seven and eight for the first, second and third (fourth) years respectively. The classes are held from 7 to 7.50 a.m., 4 to 5 p.m. and 5.10 to 6 p.m. This presupposes that the apprentices do not start work before 8 a.m. It has been found, even in the case of full-grown workmen, that work done between 6 a.m. and breakfast does not reach the standard of that carried out later in the day—a still stronger argument in the case of growing boys against work undertaken before breakfast. For this reason, *i.e.*, the youth of the pupils, the number of hours worked per week increases from six to eight according to the year of the course.

Tests have been carried out which prove that night work is *very* much more inefficient than day work ; that work done between 9 and 10 p.m., 8 and 9 p.m., etc., is progressively more efficient the earlier it is. For this reason the classes are not held later than 6 p.m., while certain subjects are taught early in the morning. As a nation, we are unaccustomed to commencing office hours at 7 a.m., so the morning classes might be held from 6.30 p.m. to 7.30 p.m. instead.

With regard to payment of fees to the firm's staff, they might be remunerated at the rate of three shillings to five shillings per hour, whilst the Manager would receive a fixed salary.

The cost of a Works School is not so considerable as might be supposed, and it can largely be covered by the fees obtained from the premium-apprentices. These premium-apprentices can attend the fourth-year classes, which form an excellent preparation for the Technical Colleges and Universities. At this point, it will be well to remember that the chief reason why our Technical Education has hitherto achieved but scant success is that we have not always recognized the difference between those apprentices who, in the ordinary course of events, remain workmen, or, at best, become

shop foremen, and those who are destined for higher positions in the industrial army. In the future it will probably happen that a very much heavier education rate will be levied on firms. By their undertaking to maintain a school of their own (satisfying the conditions laid down by the authorities), this will be reduced. They will have the added advantage that the boys will be taught in the manner more directly benefiting themselves.

The most important subject of the course is Patriotism, Citizenship and Political Economy. Boys of fourteen to eighteen are at an impressionable age. The tendencies they acquire during that period they keep through life. A very grave responsibility rests on our rulers and educational authorities for having neglected for so long to bring forward a scheme of Compulsory Technical Education, which would embrace teaching on these subjects. How can a boy, starting life, maybe at fourteen years of age, in the gloomy surroundings of some of our industrial towns, living perhaps in a slum, realize that priceless heritage handed down to him by his forefathers—the right to call himself a citizen of the British Empire ? Flung out into the world at that age, with no knowledge of his duty to his country, or

of how that country is governed, or on what economic laws his own existence is based, is it to be wondered at that he sometimes falls a prey to the Socialist, and is carried away by the specious doctrines of Lassalle, Rodbertus and Marx? It is time that a determined effort were made to place before the *young men and girls* of the United Kingdom the true facts of our political existence, and not leave them to "pick them up for themselves."

The proposed course of study for a Factory School is given below:

	<i>First Year</i>	<i>Hours per Week</i>
English	.. . . .	2
Arithmetic	. . . .	1
Geometry	. . . . .	1
Drawing	. . . . .	2
	<hr/>	<hr/>
	6	
	<i>Second Year</i>	<i>Hours per Week</i>
English	. . . . .	2
Arithmetic	. . . . .	1
Algebra	. . . . .	1
Geometry	. . . . .	1
Drawing	. . . . .	2
	<hr/>	<hr/>
	7	
	<i>Third and Fourth Years</i>	<i>Hours per Week</i>
National Economy and Citizenship	. .	1
Book-keeping, Bills, etc	. . . . .	1
Algebra	. . . . .	1
Geometry	. . . . .	1
Properties of Metals.	. . . . .	2
Drawing	. . . . .	2
	<hr/>	<hr/>
	8	

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The syllabus of National Economy is set out below, as the subject is of paramount importance.

*Principles of National Economy* : Necessities of Life - Landed Property ; Value and Price ; Riches and Wealth ; Individual and National Economy ; Sources of Energy.

*Production* General , Work ; Capital ; Divisions of Work ; Personal Property , the Family ; Entail.

*Goods* Tariffs and Free Trades ; Formation of Prices ; Money ; Credit , Banking , Stock Exchanges ; Post ; Telegraphs ; Railways.

*Division of National Income*. Capitalists' Gain , Wages ; Interest , Ground Rents.

*Consumption* General , Crises ; Insurances ; Luxury ; Population

*The State* . The King ; the Empire ; the County , the Parish ; the Imperial Conference ; the Imperial Parliament ; the Cabinet , the County, District and Parish Councils ; Officialdom ; Law ; Justice and its Officials ; the Army and Navy ; Agriculture ; Industry and Commerce , Co-operative Movements ; Social Legislation.

*The Dominions* Consuls ; Shipping.

*Church and Education*

*Finance* Taxes ; Duties.

The introduction of Compulsory Technical Education—Municipal and otherwise—of which this essay touches one side, will be a large undertaking. It will have to be carried out, however, if we are to maintain our position in the world, and the task will be the easier the more Public Opinion realizes the problem with which it is confronted.

## CHAPTER VII

### THE POSITION OF WOMEN AFTER THE WAR

#### THE NEEDS OF THE EMPIRE

WHAT to do with the large numbers of women who will be without employment at the end of the war, after the return of the men from the Army and Navy, is a problem that becomes more and more pressing as time goes on.

It is said there will be over two million more women than men in the United Kingdom after the war, and a great shortage of the former in the Dominions. It is impossible for women, especially those of gentle birth, to migrate to distant colonies without having received cheap and adequate training before their departure. There are large numbers of well-educated and useful women in this country who, after the war, will find no outlet for their energies. Large numbers of girls, the daughters of working men, living in our overcrowded towns, will have great difficulty in earning a livelihood.

This scheme offers a solution to the problem of what we are to do with our daughters, viz.: To train women of gentle birth as farmers, in fruit-growing, chicken-rearing and intensive gardening; also to educate a certain number of girls from our large cities as domestics, and to offer very cheap facilities for migrating to the Dominions to both classes of women; and, finally, to provide them with homes and work in the new lands. The migration of trained women has been comparatively insignificant; this must now be undertaken in an Imperial spirit.

Let us first take the case of the lady farmers. These ladies would be the daughters of lawyers, clergymen and gentlemen "in the City" in small circumstances, and who at present have little prospect of advancement in life, owing to their restricted surroundings and want of money.

It is proposed that they should go through a course of training of six months or a year on farms in this country. On these farms they would learn the elements of fruit, dairy and chicken-farming or gardening, based, as much as possible, on Colonial conditions. At the same time, they would take a subsidiary course of cooking, dress-making, care of children, riding, etc. The

farms would be owned by private persons or companies, who would receive a capitation grant, which would be at the rate of thirty pounds to forty pounds per annum for every student, on the following conditions :

- (1) Each student to undertake to migrate at the end of her course, if judged suitable by a board of experts appointed by the Governments of the Empire, and to repay the grant at the end of five years after her arrival in a Dominion.
- (2) The subjects of the training course to conform to the decision of the board of experts mentioned above
- (3) The fees for training and maintenance, exclusive of the capitation grant, not to exceed fifty pounds per annum (in the case of the grant totalling forty pounds per annum, the fees not to exceed forty pounds per annum).

Each farm would accommodate from fifty to a hundred girls.

The students would obtain preferential passage rates ; the fare to New Zealand, second class, would possibly be ten pounds, if parties of not less than a hundred girls

sailed at a time. The rates to Australia and Canada would be reduced correspondingly.

One cannot insist too strongly that it is quite useless to send out girls of this class without their being certain of obtaining, not only homes and employment, but also markets for the products of their industry. The students should therefore proceed to Government farms of some years' growth. Private farms are not so suitable owing to possible shortage of labour, which might be caused if students were to marry soon after their arrival.

The students would go in batches of about fifty to a Government farm, where the heavy work (as also on the training farms in the United Kingdom) would be done by men. The produce from these farms would be exported to England or to other Dominions under Government auspices.

The profits on the sale of the farm produce would go to the students, after deducting a certain proportion, part of which would be returned to the Imperial Government (see the beginning of the article), and part to the Local Government towards defraying the expenses of the farms, etc.

After two or three years' work on these

farms, the ladies would have acquired sufficient experience of colonial conditions and capital to enable them to proceed, if they so wished, to farms further up-country. These farms would have been cultivated by the Government, or bought from their owners ; they would either be leased or sold to the ladies, who would have expert Government advice on farming placed at their disposal.

Suitable matrons would live with the girls on the farms, and would accompany them on the ships. The students should be at least twenty-one years of age before emigrating, and references from three persons, one of whom should be a minister of religion, should be given.

### *The Domestic Servants.*

These would be drawn from the daughters of workmen dwelling in our crowded cities, and would be sixteen to sixteen and a half years of age when entering a training institute, which they could only do if they undertook to migrate at the end of their training, if considered suitable by the board of experts (*vide supra*).

The course should be six months in length. Each girl in the United Kingdom would go to an institute in the country

for three months, and then to another in or near a town for the remainder of the course. Each institute should accommodate fifty girls. The course would consist of domestic service, dress-making, cooking (in the last three months), and the care of children, etc. In the fourth, fifth and sixth months the girls would be sent out as half-day and whole-day "helps." They would receive half the wages paid to them for this work, the other half going to the State, which would maintain these institutions. Food cooked at the cookery classes, if not all consumed by the students, would be sold to the clerks and workmen of the nearest offices or factories (at reduced prices). Payments for this food would be divided, as in the case of the wages earned by the girls as "helps."

A deposit of twenty shillings would be demanded of each girl before entering the training institute. This sum would be placed to her credit in a Savings Bank account in the Dominion to which she would ultimately go. In the event of her not being accepted, after her training, by this board of experts, this money would be returned. The Home Government would pay for the cost of maintaining, clothing and training each girl for the six months (sixteen pounds

to twenty pounds), and advance of five pounds or six pounds for clothing, before she leaves these shores, this loan to be repaid within three years from her arrival in the Colony.

The Colonial Governments (of Australia, Canada or New Zealand) should pay the passages of the future servants, though they might insist on a certain repayment after a few years from the time of the servants' arrival. Once over there, the girls would go to Government hostels till they obtained a situation. They would be able to return to these hostels when out of work, on payment of a small weekly charge.

The cost of these proposals would be large, but the Empire would gain by their being put into operation. We should provide the Dominions with large numbers of well-trained women, and at the same time open fresh careers to two classes of women in the home country, who at present have but little scope for their energies and ambitions.

*Note.*—The amounts mentioned are based on pre-war conditions.

## CHAPTER VIII

### CO-OPERATION VERSUS COMPETITION AND THE TREATMENT OF EMPLOYEES

IT is said that a new Britain will arise after the war, based on conditions totally different from pre-war days. Let us study a few of these proposed changes, as it will be found that considerable uncertainty exists in general as to their scope and direction.

#### *Work.*

All classes are included in this survey, and the sub-heading is deliberately chosen in preference to Labour, which is generally confined to manual activity.

We must endeavour to sum up the divergent aims and interests of the following selected categories of people, who comprise the chief groups of the population :

- (1) Agriculture : (a) large landed proprietors, (b) small and tenant farmers.
- (2) Industry : (a) the small business man (boot-maker, tailor, smith, etc.), (b)

Co-operative Societies which sell their own manufactures.

- (3) Commerce: (a) the small shops, (b) the multiple shops and stores, (c) the wholesale merchants, (d) the Co-operative Societies.
- (4) The Upper, Upper-middle, Middle and (included therein) the Professional Classes.

These categories will be dealt with as occasion arises under the various sub-headings.

*Competition v. Co-operation in Relation to the German Danger.*

Till 1850 Competition benefited all classes. From 1850 to 1890 occurred a period of coalescing of masters, men, the States of the Empire, and other bodies. From 1890 onwards Co-operation has been the keynote in every walk of life. This spirit must be developed, and the various spheres of activity defined in order to reduce class friction and possible distress.

When we look at the relatively meagre results of co-operation in Britain as opposed to those on the Continent, we must be candid and admit that it is due to (1) unsuitable education, (2) lack of suitable financial machinery.

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The unsuitable education has been dealt with in preceding chapters.

### *Financial Aids to Co-operation.*

Our machinery for obtaining credit requires drastic improvement. When we look across the North Sea, we find the imposing structure of thirty-five thousand agricultural, industrial and commercial lending Banks and Co-operative Societies, which largely owe their successful existence to the Central Prussian Lending Bank. This bank has a capital of some £4,000,000, and a turnover (in 1908) of £560,000,000. This is surmounted by the imposing edifice of six hundred cartels, of which the powerful Steel-works Cartel is the chief. Beside these stand the big Banks (Deutsche, Dresdner, etc.). These are linked together by interlocking directorates, etc., which, together with the tariff rebates on the railways, the Government rebates on exported worked-up imports, the export premiums of the cartels, the Consular System, etc., form a structure of colossal strength, the like of which the world has never seen. Against these economic compacts the individualistic efforts of British trade dash themselves in vain.

Let everybody in this country realize

that the future of successful co-operation lies in the formation of a Central British (State) Lending Bank, on lines similar to the Prussian. At present, in spite of what our bankers may say, it is *not* possible to obtain money on terms as favourable as were in existence in Germany before the war. Our Central Lending Bank might start with a capital of £500,000, increasing to £5,000,000. Added to this should be the reform of the charter of the Bank of England, whereby the Bank would have the credit of the United Kingdom behind it, and not, as at present, that of the Bank itself. In other words, the Bank would fall into line with the State Banks of various other countries.

Our State Lending Bank will provide a means for supplying funds *as has been done abroad* to (1) the landed proprietors and small tenant farmers for the purpose of obtaining personal credit and money for "running costs" (Raiffeisen or Ability Loan Banks), and for forming Co-operative Societies for purchasing implements, etc., and for selling farm produce wholesale; for a great extension in dairy and stock-selling co-operative societies and stock-raising societies, as is done in Denmark and Germany.

(2) The small business men (*i.e.*, boot-makers, tailors, butchers, and "village shops"), who will be able to form societies to purchase and sell wholesale, and to safeguard their interests, and so to compete successfully with the Multiple Shops, the Consumers and Wholesale Co-operative Societies and Wholesale Merchants.

(3) The upper, upper-middle, middle and (included therein) the professional classes, have no means at present of expressing their corporate views, and of safeguarding their interests. In Germany seventy thousand or more engineers, scientists, etc., march under one banner, with numerous leagues and co-operative societies of officials and clerks, etc., in support.

This Central British Lending Bank will be the means, as it has been in Germany, of enabling all these different classes to co-operate within themselves and with each other.

It should be pointed out that the Lending Bank must be :

- (1) State.
- (2) Affiliated to the Bank of England.
- (3) Separate from the British Trade Corporation or other similar institutions.

We have now considered Co-operation and the effective means of its adoption by

the small people and concerns of the country. The question of co-operation among the large firms is excluded from the scope of this essay, as are also the questions of Banking and Mortgages and the position of the Trades Unions.

### *Masters and Subordinates.*

We now have to deal with the handling of the persons employed in all subordinate positions.

The materialistic doctrines of the middle of last century produced a caste of mind, the characteristics of which were perseverance, unimaginativeness and rigidity. We have now left the emasculated fetishes of a worn-out (economic) creed, and are imbued with more optimistic and flexible ideas. We no longer try to fit the men to the jobs, but jobs to the men. Each one of us has a different temperament, and the most successful man in business and elsewhere is he who studies the idiosyncrasies of his men, and makes the greatest use of the natural aptitudes. It is generally admitted that a man works best when he works for himself. From the nature of things, but few of us can work on our own account. In order to give each man an incentive, and to keep him contented, a bonus based on length of

service, rate of pay, profits of the firm, and, when feasible, output of the individual, should be given to every member of the staff as well as to the workmen, not as a gift, but as a right.

One most important feature in the relationship of master and men is the Fortnightly Council. This is a compulsory institution in some countries, and has given excellent results. It consists of the following persons: One or more directors, the works manager (or his equivalent), and representatives from the *men* of each department (staff or workmen). These representatives are elected by their fellow-workers by secret ballot for a given period (*e.g.*, a year), and may only be dismissed by a resolution of the Board of Directors. The representatives are paid at the rate of "time and a quarter" for the duration of the meetings. Minutes are kept of the proceedings, at which questions of policy, innovations, etc., are discussed. The advantages of these Fortnightly Councils have been :

- (1) The best men are elected.
- (2) The interest of the representative in the firm's affairs is roused, and
- (3) The representatives become personally acquainted with the Directorate,

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and lose any sense of nervousness in their negotiations through personal contact, which is invaluable when settling differences.

It must never be overlooked that in order to fight the foreign Trading Formations (not *only* firms), it is essential to train Industrial and Commercial General Staff Officers (see preceding articles), and to create posts for them suitable to their special training and *aptitude*, either in the firms themselves, or in the offices of the trading associations or other co-operative bodies.

Further, it has been found that to give a holiday of several days on full pay at regular intervals to the workmen, provided time-keeping over the period does not fall below a certain percentage, has given excellent results. The workmen are grouped into sections for this purpose, so as to avoid dislocating the work; only those who have been a certain time with the firm benefit by this scheme. In some cases the firm rent cottages at the seaside for their employees, and send the men and their families by special train.

## CHAPTER IX

### MISCELLANEOUS

CONTINUING our reflections on a changed Britain after the war, we will now consider how to increase what we may call the amenities of life.

*Architecture* (see Chapter II.).

Visitors to England are struck by the mediocrity of much of our modern architecture. Handsome towns react on the minds of their dwellers, and produce beneficial results on the public health. Our average architect enters the offices of an older member of the profession, and *may* also attend some Technical School. We must break forcibly with the old traditions, else we shall require a generation to leave behind us the Victorian ideas.

Architecture must be made a “closed profession,” similar to Medicine and the Law. An architect should study three or preferably four years at a University, with a year’s practical training before gaining a diploma. The curriculum of our Technical Universities in this art must be con-

siderably expanded. What could be a better incentive to genius than to encourage the study of Architecture at Oxford and Cambridge, with their century-old buildings of perfect design and venerable traditions, which are invaluable in these days. When the true meaning of architecture has been spread abroad throughout the land, we may hope to see our Town Halls, Public Baths, Theatres and *Factories* erected on lines worthy of our position amongst the nations.

### *Public Baths.*

It will be found on investigation that our Public Swimming Baths are patronized by but a small proportion of the population, and that they are used by a relatively restricted class. This is due to the fact that they are frequently of unpleasing outward appearance, poorly fitted out and heated, and, above all, that compulsory washing with soap before entering the bath is frequently *not* enforced.

Having had a wide personal experience of foreign baths, the writer unhesitatingly maintains that this last factor is largely the cause of the relatively small use to which *our* public baths are put. It may be added that compulsory baths are in existence in German State Coal Mines, and that in

many firms in Germany baths are provided for the furnace-men.

### *The Town Planning Act.*

This stands in need of amendment, as it is little short of a scandal that it should cost about one pound per head for a small Yorkshire village with a population of about two thousand inhabitants to draw up a Planning Scheme for dealing with the increased population of the neighbouring mining centres.

### *The Public House Question.*

If the question is studied closely, it is found that the working man has but little opportunity for hearing good music, or of taking his family to anywhere but the cinema shows, music halls or "pubs"! Why should not the brewers be allowed to erect their Beer-halls on or near their premises if suitable, where the men could take their families to spend the evening, and where they could obtain cheap and good meals, and good music in addition, and newspapers, etc. Of course the necessary corollary to this suggestion is the provision of good cooking classes in the neighbourhood of the halls. It is far easier to solve the drink problem by catering for it

in other ways than by prohibition or reduction of licences, which leads to secret drinking, or drinking at the clubs. Everyone who has been abroad cannot but agree that England would benefit by the experiment.

### *The Flight from the Land.*

It is a curious fact that in order to keep people on the land it is necessary to rouse a sense of local or national patriotism. This fact may be observed in the history of Wales, Scotland, Switzerland, Tyrol, Italy, Norway, Provence (France), Germany and Bohemia. The movement towards an uplifting of the people has generally coincided with the appearance of a National Poet, the use of a distinctive national or local style of dress, the national or local language or dialect, and the teaching of local or patriotic history. The outcome has been the birth of new industries or the regeneration of old, in whole villages, districts or countries. In order to get back and keep our people to the land, we must revise our methods of teaching History, Geography and Singing.

Too long have we suffered from lack of pride of race and pride of place, from a denationalized teaching on these subjects. How can we expect our untravelled classes

to realize the inestimable privileges of being British, when we teach that every nation is as good as another ?

Local history, legends, geography and songs should be *first* taught in our schools ; then those of the county or district, followed by those of the country and of the Empire, and, *lastly*, of the world.

Why should history writ in stone or buried in legends be reserved too often for students from a distance, to be unearthed only from books, hidden in museums, and kept out of the general reach of the local inhabitants ? Is not a knowledge of the *history* of one's country one of the chief causes of patriotism ? Still more so, then, is that of the local legends, traditions, history (and pageants) of local Pride of Place.

When our educational authorities have given practical proof that they realize the necessity of a revival of folk-dances, musical festivals, the use of local dress and even language or dialect, the teaching of local history, legends, songs and geography, we shall have gone a long way towards solving the question of keeping the people on the land.

### *The Foreigner in Our Midst.*

Our men have not fought and bled in the trenches to return to find foreigners keeping

them out of jobs, but, on the other hand, it is *undeniable* that many foreigners have a knowledge of languages and other abilities which, unfortunately, are too often lacking in the Briton. Then, too, the question is complicated by the numerous nations who are our Allies. A possible solution lies in a tax on the firm or individual foreigner, graduated according to the employee, and the number thereof employed by a firm. Certain foreign nations heavily penalize our continental houses and travellers by exacting onerous taxes for representation. Our counter-measures should ensure a corresponding tax both on the nationality of the business house and of its representatives. This is necessary to counteract certain practices which are in common use in South America for the purpose of avoiding these taxes. Graduated harbour dues and demurrage charges should also form part of this protective programme, which would not, however, prevent our obtaining the advantages of the knowledge of the best class of foreigners. The United States Monetary Commission have published verbatim reports of the opinion of the heads of German Banks, which state, with regard to personal credit, that the British practice is disadvantageous, as borrowers are compelled to cover their

requirements through several firms, and that commission rates and terms in every branch of banking (?) business are higher than in Germany. There is no legal restriction on business, *consequently no opposition is offered to the different methods employed by Foreign Banks, despite their competition.*

In order to take away this disadvantage, no enemy banks should be allowed to do business in England, and all foreign banks should be placed under rigid restrictions and control.

At the time of writing—June, 1918—it is still possible for foreigners, whether friendly, or uninterred enemy, or naturalized Englishmen, to enter the Patent Office and inspect Patents without let or hindrance, provided they do not behave in a disorderly or suspicious manner. It is high time that a rule should be made and enforced, that inspection cards must be shown on entry, and objectionable persons, from the point of view of nationality, excluded.

#### *A Definite Policy.*

Mr. Hughes rightly asks why we have formulated no Anti-German Policy. The Government should be pressed to give a definite pledge to revive the Navigation Acts of Cromwell against the enemy nations. Throughout the centuries this terrible

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weapon has enabled us to destroy the supremacy of our adversaries, and to sweep their commerce from the seas.

The Germans, high and low, have told us for many years that this is to be a war of extinction. Their object is to destroy, not to conquer England ; to leave us with nothing but our eyes to weep with, in a land, beside which Belgium, in her present starving condition, is as a flowering garden.

To whom do we owe our first thought and consideration ? To our womenfolk and children, that they may live and enjoy peace and prosperity (rather than exist in misery and squalor), or to the German nation ?—a nation whose military brutality and commercial knavery have excited the loathing and contempt of the entire world ; a nation whose record, commencing with the Crusades and extending through the Napoleonic and Franco-Prussian Wars, the Venezuela Blockade and the Boxer Expedition, down to the present war, shows nothing but unexampled rapacity and violence ; a nation which recognizes but one authority—the bludgeon.

Arms lie ready to our hands ; it is our duty to Civilization, to those ideas of freedom, justice and clean living for which we are fighting, to employ them :

**The Navigation Acts.**

The expulsion of all Germans and German-Austrians under a certain age at the cessation of hostilities (with proper exceptions).

Denaturalization of British subjects of enemy origin of the first generation (with proper exceptions).

Revocation of change of enemy names to British or foreign (*e.g.*, French), except in cases where the individual's parents have been of British nationality for one or more generations.

The retention of all ex-German Colonies, especially in the Pacific, by their present holders.

The refusal to allow enemy banks to establish branches in the Empire. (The German banks are the product of German necessity in 1870-73 and of German mentality. They have but little relation to the form of the German Government. To the German mind, trade factors lie like a crescent, with the horns pointing to the enemy, with a view to employing the famous "pincer" tactics of the German Army. The crescent is formed by the following factors : Diplomats, Consuls, Business Firms, Banks, Differentiated Railway, Shipping and Canal Rates.)

*The Patent Office.*

In order to expedite Patent Cases, the cumbersome procedure at present in use in the Law Courts could be simplified. Although the abolition of the Law Courts in Patent matters is not advocated, it should be possible to refer the matter to a specially constituted court, presided over by experts in the various branches of Patents.

*The Encouragement of Thrift.*

The English people are frequently reproached for their lack of thrift, but the Savings Bank, as at present constituted, does not tend to encourage this virtue. Money invested therein only bears interest as from the first day of each month, at  $2\frac{1}{2}$  per cent. per annum. In Germany, the Savings Banks (largely Municipal) pay  $3\frac{1}{2}$  to  $3\frac{3}{4}$  per cent. per annum, reckoned to the nearest working day. That is, ten pounds invested on the 1st of June in England produces fivepence interest by the 1st of August, and fifteen pence in Germany. It is time that the principles governing our Savings Bank were altered, and made more attractive. The bank should exist for the purpose of encouraging thrift, not for obtaining money by the Government at a low rate of interest.

## CHAPTER X

### THE LAND PROBLEM

#### BANKING AND FINANCIAL AIDS TO CO-OPERATION

##### *The Land Problem.*

The Land Problem is even now coming to the fore. The conveyancing or transferring of land in the United Kingdom needs simplification. This may be carried out by introducing compulsory Registration of Land Deeds in County Offices, along the lines of the Voluntary Deed Registration at present in use in Scotland, Yorkshire and Middlesex. Compulsory Title Registration, as tried in London, has given very unsatisfactory results.

##### *Banking and Financial Aids to Co-operation.*

The British Banking System is governed by the Currency Principle, as enunciated by Ricardo, and materialized by the Peel Bank

Act of 1844. The Foreign Banks are actuated by the Bankers' Principle.

The Currency Theory says that : Prices are controlled by the proportion of the goods for sale to the amount of money available ; further, that the speed of circulation of money regulates itself. High prices cause increased imports, and exports decrease. Payments to Foreign countries and exports of gold thereto increase, and therefore prices fall. On this theory is based the Charter of the Bank of England, which in ordinary times may only issue as many notes as it has gold, plus £18,000,000 of Government securities in its coffers.

*This Theory is inexact.*

Payments are now so largely made by credit and paper, that the gold backing is only of secondary importance. Further, increased output and rise in prices increase the demands on money and its speed of circulation, and a consequent need for a larger supply of notes.

It is therefore necessary to alter the Charter of the Bank of England, and to bring it into line with the other important State Note Banks of the world—the more so, as it has broken down invariably under

strain, and has had to be suspended four times since its existence—the last time in August, 1914, which suspension continues at the present time. Under the present Charter the Bank has to withdraw from circulation any notes issued in excess of its gold reserve plus £18,000,000, which weakens its position in a crisis. Our new Charter should read as follows : The Bank may issue notes covered as to one-third by a Cash Balance, and as to two-thirds by Bills of Exchange at three months. The Cash Balance is to consist of Gold, Silver, Treasury Notes, and Notes of other Banks (and during the war, Loan Cash Notes, *i.e.*, Notes issued against certain property and securities lodged with the Bank) The Bank is to be taxed at the rate of five per cent per annum, on notes not covered by gold, over a contingent amount, of say, £40,000.000

The State should ensure that the Bank of England collects and retains the gold money of the country in its coffers in order that it may maintain a preponderating position in the money market This is in order to assist the National policy of the country.

Legislation should be introduced whereby the banks of the country should be encouraged to hand over their gold reserves

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to the central bank and propaganda should be made to accustom the nation to being paid in notes and not in gold.

Every effort should be made to keep the gold backing of the notes above  $33\frac{1}{3}$  per cent. of the amount of notes issued

This will now give us a flexible basis on which to construct our system of Financial Aid to Co-operation.

The foundation should be a Central State Co-operative Loan Bank. This would lend, as a rule, to other banks only, and would start with a capital (loaned by the State) of £500,000, rising to £5,000,000. This Bank would lend money to Central and District Lending Banks (see next paragraph) on the following terms—All loans to be placed with the Bank if a preference interest of  $3\frac{1}{2}$  per cent. per annum on a certain proportion of the loan is to be charged—the balance bearing (Bank Rate—one per cent) or less. All surplus funds to be deposited with the State Bank, which would pay three per cent. per annum thereon.

This State Bank would gradually lead to the formation of co-operative societies on a large scale, amongst

- (1) The Upper, Upper Middle, and Middle Classes.
- (2) The Large and Small Farmers.

(3) The Small Business Men (shop-keepers).

(4) The Working Classes.

These co-operative societies would be producers' societies as well as consumers'—a type of society that has had but little success in England hitherto.

When once we place the financial means of co-operation within reach of large numbers of our people, we shall soon cease to hear of our lack of this essential to modern progress.

#### *Agricultural Co-operation.*

This should be carried out by means of the Lending Banks based on the Raiffeisen System, which have been so successful in Ireland and on the Continent. These Banks lend on the ability of the man, not on his financial security, and are strictly local in scope.

#### *Industrial and Commercial Co-operation for Small Business Men, and for the Upper Classes and the Workmen*

This would be effected by joint efforts of Raiffeisen and Schulze Banks, which have proved their worth abroad, and which work on more or less similar lines.

By means of these Banks the Landlords and Small Farmers will be able to form extensive co-operative societies for purchasing chemical fertilizers, implements and stock, and for selling their produce, and for stock-raising. They will thereby be able to obtain better prices, as the societies will advance them a certain proportion of the sale money, and will sell the produce, etc., when the markets are most favourable. The small business men (boot-makers, etc., and the village shops) will be able to purchase their goods at cheaper prices than at present, and will thus be able to compete with the Multiple Shop Stores and Consumers' Co-operative Societies.

The Professional, Upper, Upper-Middle and Middle Classes will be able to form Co-operative Stores and Societies for various objects dealing with their class interests.

The Working Classes will have increased facilities for developing their Co-operative Movement. It will thus be possible for the various classes to co-operate amongst themselves, and, as will be shown in a further article, to harmonize where possible their conflicting interests.

## CHAPTER XI

### MORTGAGES AND THE FINANCING OF TRADE

In preceding articles we have dealt with the Reform of the Charter of the Bank of England, Agricultural and Trading Co-operation, and Conveyancing of Property. We have shown by these means how Personal Credit and Running Costs may be met. We must now make provision for Improvements and Death Duties (primarily in Agriculture).

(1) Mortgages at present have only a restricted sale. In order to broaden the basis of credit, a Government Return should be prepared showing the percentage and value of the mortgageable and mortgaged property in the United Kingdom.

(2) A State or Municipal Mortgage Bank or Banks, co-operating with our existing Banks and Insurance Companies, should be formed. These Banks would issue mortgages at a low rate of interest up to, say, sixty or seventy per cent. of the value of property, on the understanding that this

interest included a sum which automatically redeemed the mortgage. These mortgages, under this agreement, would be non-foreclosable, as long as this interest and Sinking Fund were paid. Arrears in payment would be permitted to be paid off up to a certain amount. The mortgages would be issued in the form of bills against the *Bank*, *not* against the *Mortgagee*. They would thus find a ready sale, and would form an additional basis for credit. At present, terms of certain mortgages prohibit the mortgagee from paying off the mortgage by instalments. This is detrimental to the country's interests. Legislation should rescind this clause in Mortgage Agreements, and the usury laws should be made more exacting, in order to prevent the exploitation of the new class of property-holders called into existence by the war.

#### *Financing of Trade.*

Our present Banks are essentially Deposit Banks. In order to promote Trade, either Promoting Banks must be founded, or the scope of our existing institutions widened.

The weakness of the German Banks lies in the low proportion of easily realizable securities (assets) to deposits. Legislation

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must prevent this occurring in any new banks or banking developments in our Empire. One of the factors which render German competition so formidable is "*Buchforderungskredit*," i.e., credit advanced on bills after the inspection by the bank of its clients' books. For instance, if a customer of a firm purchases ten thousand pounds' worth of goods, payable in three years, the firm draws a bill on the customer for that amount, and presents it to their bank. The bank advances, say, eighty per cent. of this sum in instalments to the firm, at the same time drawing short-dated bills on the firm to the value of the instalment. This system, with proper safeguards, might be introduced into England.

Professor Hauser, in his book, "Germany's Grip on the Commercial World," gives a description of this procedure.—"In the printing trade, competition has created credits of 24, 36, or even 60 months. A printer buys a machine for £400, payable in 50 months, and gives to the seller 50 bills for £8. The seller hands these as security to the bank, as well as a bill for £400 on himself. The bank, as it matures, replaces the bill for £400 by one for £376 (it has realized three of the £8 bills), three months later, by one for £352, and so forth."

One of the weak points in German banking is the periodic payments of large amounts on stated days (instead of being spread over a period).

At present Bank Managers are prohibited, at any rate in one of our largest banks, from becoming directors of trading concerns. It might be beneficial to the country if this practice were abandoned, as the companies would have the benefit of their expert advice.

In order to simplify calculation, and fall into line with foreign practice, we might profitably consider the banking year to consist of 360 days, instead of as, at present, 365 or 366, each month having thirty days. "Monthly" bills falling due at the end of February to have only 28 or 29 days.

### *Decimal Coinage.*

Closely connected with Banking is the question of the proposed Decimal Coinage. If the £1 is to be taken as a basis, it would mean that all present penny articles would cost *twenty per cent.* more—a fact which is not mentioned by the advocates of the £1 basis, who say that the farthing will only lose four per cent. of its present value. If  $\frac{1}{240}$ th of the present £1 were taken as a

basis, there would be no rise in price of any article ; our new coinage would be as follows :

<i>Value</i>	<i>Denomination</i>	<i>Material.</i>
$\frac{1}{4}d$	Farthing }	
$\frac{1}{2}d$	Halfpenny }	Copper or nickel
1d	Penny }	
5d	Fivepence, or Dime }	
10d	One Deca or Deka }	
20d	Two do }	Silver
30d	Three do }	
50d	Five do }	
100d	One Imperial, 10 Dekas }	
200d	One Double Imperial, 20 Dekas }	Gold
500d	Five Imperials }	
1000d	Ten Imperials }	Paper
Etc , etc		

If this scheme were adopted, an article costing 1s 11d. at present would cost " 28 " on the 1/240th £1 basis, and, theoretically, .096 of £1 (practically 1/10th of £1, if the £1 is to have as basis—a rise of  $\frac{1}{2}d$ . in the shilling).

The coin under the £1 basis nearest to the present penny will be 1/20th of a florin, or 1.2 present pence ; thus it will only be possible to purchase 200 1d. papers for £1 ; whereas, before, 240 could be bought (*a rise of 2 4/10ths of a penny in the shilling*). On the face of it, this seems a rather expensive simplification of our coinage, in view of the merits of a 1/240th £1 basis.

*Depreciation and Income Tax.*

It would seem, after an inspection of the schedules at Somerset House, that the Depreciation on Machinery, etc., permitted by the Income Tax Authorities needs drastic revision. It is scarcely to be believed that such old-fashioned regulations exist, whereby, except in special cases, no depreciation on buildings is allowed. How can British firms hope to compete against the foreigners, who are properly treated in this respect by their Government, when in England only very limited depreciation is permitted, and where, for instance, mining machinery may not be depreciated more than  $7\frac{1}{2}$  per cent. per annum? Any loss to the Treasury caused by reforms in these matters could be made good by taxing the foreigner and increasing British Harbour Dues on Foreign ships.

*Reserves.*

All companies should be compelled by law to place five per cent. of their gross profits to the reserve, till that reserve equals one-tenth of the authorized capital.

## CHAPTER XII

### THE GERMAN TRADE MENACE AND HOW TO OVERCOME IT

THE strength of this menace lies in German Education, Finance, State Aid, and, above all, in Co-operation among firms and industries. We have already dealt with Education and Finance; we will now consider State Aid and Arrangements.

The Germans enjoy the following advantages :

- (1) Preferential Freights on the Railways (ninety per cent. State owned) to German goods over foreign, including
- (2) Exceptionally low combined rates with shipping companies to certain foreign ports.
- (3) The granting of Tariff Rebates on petroleum, coffee, wheat, etc., which has passed through Germany (or even exported direct) after having been worked up (*i.e.*, refined, ground, etc.), by remitting to the exporter the duty equivalent to

that on the raw material entering Germany, and paid by any importer.

(4) The Treaty of Frankfort (1871), which grinds down the working classes of France by compelling her to admit German goods under a preference Tariff. (Germany has wrung even more onerous terms from Russia and Roumania.)

In passing, it may be noticed that certain coal-tar products in England are carried by rail at a cost of 39s. over 186 miles; in France, 9s. over 160 miles; in Germany, 22s. 6d. over 530 miles. These examples could be repeated *ad nauseam*. To overcome these disadvantages countervailing Tariffs, Harbour Dues, and Railway supercharges are absolutely necessary.

We now come to the most formidable factor of all,

### *The German Cartels.*

They number at least six hundred. The German Government are compelling whole industries to form themselves into cartels. The most redoubtable of these associations is the Steel Works Cartel, which practically controls the whole output (17,000,000 tons in 1912). To give an idea of the high state of organization of German as compared to

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British trade, the recent U.S.A. report on Export Trade devoted eighty-seven pages to German Associations, and only four to British.

The high state of organization and scientific training required by the officials of the Central Offices is but little appreciated in this country. To fight the German Trading Formations—this term is no exaggeration—we must carry out the reforms dealt with in previous articles, and create organizing companies. The following extract gives an excellent picture of the aim of the German Cartels :

“ Conditions of sale of the German Rolling Mills Combine : The guiding principle, except when competition from German firms outside the Combine forces a readjustment, is to fix prices so that the Combine is able to compete with foreign iron; *i.e.*, that prices are such that it does not pay to import *English* iron even by the cheapest route (Hamburg). *This system (of prices) allows of the fullest use being made of the protective Tariff accorded to the German Rolling Mills products.*

“ The Cartels came into existence for the first time some forty years ago. They are associations of firms working together to

secure better prices for their products, to reduce agency, advertising and carriage expenses. By co-operation, they are able to undertake large orders on favourable terms ; to allot a given order to that member of the Cartel most suited to its execution ; and to spend money on experiments and plant which would otherwise be impossible.

" In post-war trade orders will be of very large size, owing to the reconstruction of devastated provinces.

" Producing units capable of coping with these orders must be on a commensurate scale. It is an axiom that non-cartellized producers are unfavourably placed with regard to non-cartellized purchasers. The non-cartellized purchasers are unfavourably situated in relation to cartellized producers. The latest trend of German industry has been towards ' Integration ' and Coalition combined. An example of Integration is : A large electrical undertaking founds a bank for electrical undertakings and retains the majority of the shares. This bank creates factories for Light-Bulbs, Cables, Power stations and Erection bureaus. These ends are attained equally well by the bank purchasing the majority of the shares of existing undertakings. It may also be possible for the bank to acquire sufficient shares in

Electric Railways to obtain a preponderating influence therein. Thus a multiple-stage integration is effected which, starting with the purveyor of capital, embraces every phase of production and commercial exploitation.

" Coalitions alone lead to fights on price questions as between the various groups, with disastrous results, which react on the whole community. Trusts alone cannot give permanently satisfactory results, as even the most powerful unitary control cannot discern and exploit very small opportunities (wherein lies the essential part of the struggle for world markets) so successfully as well-combined groups of independent firms, who devote their whole time to the study of limited areas of the market.

" Trusts also tend to accumulate vast sums of money in a very few hands.

" According to German opinion, the *via media* likely to produce the best results is an amalgamation of the two systems. In any case, the creation of cartels is very largely a question of banks, carried on along the lines mentioned under previous headings."\*

\* With acknowledgments to the Federation of British Industries This extract on cartels appears in an article by the writer on the German Industrial Organization. in their February Bulletins

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In 1912 the German Steel Cartel gave a rebate of fifteen marks per ton on the steel to its customers when they exported the material. What can our industry do against this array of economic force—Government Railway Rebates largely paid for by taxing the foreign imports, and Cartel Rebates on material exported?

"In 1913, in England, Cleveland iron was reduced in price tenpence per ton. German lots were offered at several shillings below this price, and several local (British) furnaces closed down. And all the while Germany's Steel Industry is increasing by leaps and bounds. Other Industries are in a like position." (Professor Hauser in "Germany's Grip on the Commercial World.")

*How to organize Business Firms and to deal with our Soldiers after the War. (Organizing Companies.)*

Two problems confront us: one to provide a scientific organization, both for the central offices of the cartels and for the individual firms; the other to arrange for the assimilation of large numbers of men returning from the war, possessing a good knowledge of military organization, or having passed through the high schools and training courses previously mentioned.

I would suggest the formation of organizing companies to solve these problems. Organization may be divided into three kinds :

- (1) Internal administrative (*i.e.*, the clerical work of a business).
- (2) Internal Constructional (*i.e.*, the laying out of the buildings and machinery and methods of manufacture).
- (3) External (*i.e.*, selling, and the relations of the firm to the Government and associations).

On (1) depends the knowledge of the establishment charges of (2) and the overhead charges of (3).

Number (1) can be carried out relatively quickly and easily.

Numbers (2) and (3) are matters which require long and careful training and consideration.

The organizing companies would confine themselves in the first instance to (1). The assertion of a recent lecturer that the average industrial firm has 85 per cent. of its organization in common with that of others, the remaining 15 per cent. making the individuality of the firm, may be safely accepted as a serviceable generalism.

The Germans have "boiler-house" reorganization companies, of which one at least is paid by results. In one case it effected a saving of 26 per cent. in a period of about one and a half years. We possess chartered accountants and valuers, frequently grouped into companies. It is but a step to add organizers.

These organizing companies would have at their head men who had made a scientific *practical*, but *also* theoretical study of organization and costing. Under them would be men who had passed through the commercial and technical universities, high schools, and short high-grade courses of both kinds. The directors would deliver series of lectures to the subordinates on organization, and issue to them printed instructions on the general principles on which organization should be carried out. There would thus be formed a corps of men working to one given aim, and actuated by one more or less unified spirit, which would not be carried so far as to rob them of all initiative. The manufacturer would thus receive the use of trained men whom he might ultimately take into his employ, making the best use of their brains in a manner congenial to *them* and profitable to *him*. We should thus gradually obtain

a commercial general staff fitted to direct operations from the cartel offices of our industrial grand fleets, and, thus equipped, to defeat the industrial high-sea squadrons of the Germans.

## CHAPTER XIII

### THE GROUPING OF THE VARIOUS CLASS INTERESTS

WE have completed our survey of the reforms necessary to carry our country successfully through the After-the-war Problems. It now only remains to summarize them, and to show the relationship existing between the five class-interests of the Nation, viz.: Agricultural, Industrial, Commercial, Labour and General.

The following list gives a summary of the preceding chapters (see also Chart :)

- (I.) The New British School of Economic Thought (Positive, Imaginative, Optimistic, Humanitarian, Co-operative) to oppose the Modern German School.
- (II.) Technical Universities with four-year courses, plus at least one year's practical work before obtaining a degree.
- (III.) Commercial Universities.

- (IV.) Consular Training.
- (V.) Public Schools.
- (VI.) Compulsory Technical Education and Day and Night Factory or Works Schools.
- (VII.) Training of Women to become self-supporting
- (VIII.) Co-operation *versus* Competition.  
Financial Aids to Co-operation.  
Masters and Subordinates. The Fortnightly Councils.
- (IX.) Miscellaneous. Architecture. Public Swimming Baths. Town Planning. Flight from the Land. The Foreigner in our Midst (a definite Policy). The Patent Office. The Savings Bank.
- (X) Land (Deed) Registration in Compulsory County Registration Offices. Reform of the Charter of the Bank of England. Central State Co-operative Loan Bank. Raiffeisen or Ability Loan Banks. Schulze Loan Banks. Consumers' Co-operative Societies. Agricultural and Small Business Men's Producers' Co-operative Societies. Upper and Professional Classes' Co-operative Societies.
- (XI) Mortgage Banks. Discounting of Bills on Inspection of Books. Bank

Managers as Directors. Decimal Coinage. Depreciation. Reserves.

(XII.) The German Trade Menace and how to overcome it. German Cartels. British Organizing Companies.

(XIV.) Conclusion.

In order to complete the survey, it is necessary to give a list of the existing and proposed institutions for giving expression to class views.

*Existing :*

- (1) Board of Trade.
- (2) Chambers of Commerce.
- (3) Federations of Industries.
- (4) Federations of Raw Producers.
- (5) Trade Associations.
- (6) Trades Unions.

To be created or expanded from present institutions :

Local, District and Central Associations distinct from each other: Landed Proprietors (7 to 9). Small and Tenant Farmers (10 to 12). Aggregate of Small Business Men (boot-makers, village shops, etc.) (13 to 15). Small Business Men Grouped according to Trade (boot-makers, village shops, etc.) (16 to 18). Trades Associations (19 to 21). Workmen's Councils, *i.e.*, Dis-

trict Councils of representatives of local Trades Union Branches (22).

(23) Tariff Fixing Commission for the purpose of co-ordinating the claims of the various interests.

(24) A new State Central Railway Freight Regulating Board to adjust freight differences and to counteract foreign subsidies and rebates.

(25) Development Boards for developing our Peat Bogs, Forests, Canals, Roads and Harbours, on the understanding that preference is given to British and Colonial firms.

(26) Federation or Co-operation of the various learned societies, Institutes of Engineers, etc.

We can now proceed to show how the five groups of interests interlock :

*Agriculture :*

Landed Proprietors, Small and Tenant Farmers send representatives to each other's district (8, 11), and central boards (9, 12), and from their central boards (9, 12) to (1), (23), (24) and (25).

*Industry :*

Trades Associations (21) and Chambers of Commerce (2) send representatives to

Board of Trade (1), Federations of Industries (3), Raw Producers (4), Tariff Fixing Commission (23), Railway Rate Fixing Committee (24) and Technical Societies (26).

*Commerce :*

Where not considered under Industry, sends representatives from District and Central Boards of Small Business Associations as follows : To Chambers of Commerce, Tariff Fixing Commission, Board of Trade, Railway Freight-Fixing Committee.

Learned and Technical Societies (26) send representatives to (1), (23), (24) and (25).

*Labour :*

The Trades Unions send representatives to the Tariff Fixing Committee and to Chambers of Commerce, and to the Workmen's Councils (Local Groups of Workmen of different Trades)

*General :*

The upper classes, through their Unions and the Federated Learned Societies, send representatives to the Treasury.

Combined regular meetings of combinations of Chambers of Commerce, Associations of Farmers, Learned Societies men and

Trades, Trades Unions and Workmen's Councils, organized into Local, District and Central Bodies, should be held:

Further, every effort should be made to utilize powerful groups of foreign *entrepreneurs* as agents for combined trades, e.g., water turbines, railways and electric works, in preference to separate agents.

This completes the general survey of the relative positions of the five groups of interests of the nations and of the individual, viz : Agricultural, Industrial, Commercial, Labour and General.

In the concluding chapter means will be shown for bringing home these views before the nation.

## CHAPTER XIV

### CONCLUSION

#### A PLEA FOR A MORE IMAGINATIVE POLICY OF RECONSTRUCTION

(See Appendix I. and II.)

“ ‘ What should they *know* of England,  
who *only* England know ? ’

“ Never before in the history of our country have we been confronted with so great or so pressing a danger as faces us to-day in the German aspirations to world-power. Never have we been opposed by such redoubtable adversaries.

“ In the different periods of our history, when we were fighting for our national existence, our industrial and commercial classes (in the widest meaning of that term), possessed a higher standard of life, education, and handicraft, than the corresponding masses of our opponents. This was the case when we withstood the might of Spain, the aspirations of the Dutch (though in a lesser degree), and the ambitions of Louis XIV. and of Napoleon.

"To-day we stand face to face with a nation more numerous than ourselves, better educated, with a more sentient nationality and patriotism, and with their powers of co-operation and co-ordination better developed; a nation keenly ambitious, possessing a well-diffused knowledge of the conditions existing throughout the world, and especially in our land, and imbued with a growing consciousness of their high destiny.

"History is filled with the examples of the downfall of countries who held fast to individualistic principles, in the face of nations who had adopted in their private and national life, the axiom 'United we stand, divided we fall'! Across the pages of history is writ large the fate of Greece, torn by the jealousies of her cities; of Carthage, weakened by the individual being accounted of greater importance than the State; of the British tribes, distracted by internecine warfare; of Holland, hampered by the mutual distrust of her various towns; and lastly, of Spain, overthrown by her inability to adapt herself to modern conditions.

"Germany stands firm to-day, as Rome in ancient times, with her people and institutions strongly organized for the common good (conditions which, however,

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do not owe their origin to socialistic or communistic ideas).

“ It is not yet too late for us to retrieve our position, and it should be the duty of every Englishman, who has seen anything of the inner workings of the German mind, to do his utmost to rouse his countrymen to a sense of the insidious dangers that loom across the waters of the North Sea.

“ ‘ Peace hath her victories no less renowned than war.’

“ These are often the more crushing, because they sometimes remain unperceived for considerable periods, and because they seem to have no direct relation to any outward cause.

“ We can still save the situation, if we take for our watchword, like Arminius of old, the idea that clearly guided his life :

“ *Overcome your Adversaries through a Knowledge of their Methods.*

“ Germany’s compulsory military service develops a spirit of co-operation, and improves the health of her people. Her compulsory technical education provides skilled workmen, and her engineering four-year courses at the universities produce highly trained engineers. The training, in general,

of her consuls, is superior to our own. The reclamation of her peat-bogs, and the upkeep of her immense forests (afforestation), as well as the extension of her canal system, afford employment to thousands, which we would do well to copy.

"Her 30,000 agricultural and industrial credit banks, buying and selling co-operative societies, are the objects of universal admiration, while her agricultural prosperity is largely due to her system of Raiffeisen land-banks, all of which owe their existence to a grant, now amounting to some £4,000,000 sterling.

"The present feeling of aggrandizement was inculcated into the German people largely owing to the influence of the famous Prof. von Treitschke, the great moral progenitor of Count von Reventlow, Generals von Bernhardi and von der Goltz, and of the host of distinguished men of letters and professors of economy who carry on his work, and who enjoy a prestige unknown to their compeers in England ; men such as Professors Schiemann, professorial attaché to the Kaiser, and famous for his anti-British articles in the  *Berliner Tageblatt*, Brentano and Schulze-Gaevernitz, the free-traders ; Schmoller and Adolf Wagner, the exponents of the historicco-ethical or New-Mercantile

school ; Halle, the naval expert, and many others.

"Treitschke's writings are for ever ringing in their ears and influencing their minds.

"Let us face the situation squarely, and take such steps as will ensure our having 'a balance on the right side,' in that day when the Germans and ourselves make the final settlement referred to in that famous phrase, spoken by Treitschke himself, '*We have settled our accounts with France and Austria, our last settlement, the longest and the most difficult, the settlement with England, is yet to come.*' That settlement is even now being effected by a contest, diplomatic, intellectual, industrial, and commercial, and may perhaps be decided by the final arbitrament, the arbitrament of *War*."

[Reprinted from the original published by the author in the "*Doncaster Chronicle*" in 1913.]

The Ministry of Reconstruction has failed to realize its mission. Its function is not only to reconstruct Trade, but also England. The Ministry itself is in need of reconstruction. Let a Department of Reconstruction Propaganda be created, at the head of which should be a man with actual experience of British and Foreign Trade Conditions,



the new spirit, and let the Government approach the Universities, the Learned Societies, the Institutes of Engineers, the Authors' Societies, etc., with the request that they either write fresh books, or make extracts from those existing on the same subjects covered by the German Goschen Library (containing 400 volumes).

Let us admit that the reason why we have not crushed Germany is owing to the incompleteness of our whole education. This is largely due to the impossibility of obtaining cheap and small books containing concentrated and, at the same time, high-grade guides to knowledge. In Germany every good book-shop contains dozens of volumes of the Goschen Library ( $4\frac{1}{8}$  inches by 6 inches, price 10d. in pre-war days). *We have no equivalent* Volumes of the "library" are seen in that country on the tables of eminent engineers, financiers and scientists, and in the hands of workmen. The British Library should be exactly the same in size, shape and stiffness of cover, as the Göschen, for purposes of practical convenience. The Publishers' Associations and Bookstalls should co-operate in publishing and selling a given number, and they should be guaranteed by the Government against loss.

Let the Ministry of Reconstruction realize that the conversion of the people of England to the need of long and thorough education will decide whether the British Empire will survive the shock of the after-the-war problems, and the colossal strangling power of the German industrial octopus.

Let the Director of Reconstruction Propaganda flood the country with speakers filled with the necessary knowledge of the proposed reforms. Let him cover the hoardings with Reconstruction Diagrams on lines similar to that printed with these essays, and induce the Press to insert articles thereon. Let him not disdain to copy the French Government, who used as an advertisement for their war loans an English picture ("The Woollen Stocking") lent by an American—and ensure the publication, chapter by chapter, in all the leading papers in the land of Professor Hauser's book, "Germany's Grip on the Commercial World," written originally in French and now translated. Let him use the Cinemas to show the scientific lay-out of German harbours, works, and other plant, and the splendours of her Universities and Town Halls. Only by *showing* our enemy's strength to our people can we hope to convince them of our own shortcomings. Let this Director ensure

the co-operation of the War Office in supplying the troops training over here, in the rest billets overseas, and in the hospitals and convalescent homes, with suitable pamphlets in the proportion of one to every six or ten men, supplemented where suitable by short and practical lectures or readings of these pamphlets.

Only trained Economists can thread their way at present through the intricacies of the five conflicting national and private interests, viz. : agricultural, industrial, commercial, general and labour (see Chart). The average man and woman moves in a fog in this matter—a fog which, as the war drags on and life becomes harder and more dreary, settles down into the gloom of hopeless depression, in which flickers the will-o'-the-wisp of Social Regeneration by Socialism or Revolution. Men, without a definite hope or *policy* to guide and *encourage* them, are subject to those strange paroxysms of fear and madness, of which Russia has given us an example.

Our reforms hitherto have not achieved the success they merited, because they have been cast on too individualistic lines. Let us recall the last speech of the great Pitt : “ Europe is not to be saved by any one man. England has saved herself by

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her exertions, and will, as I trust, save Europe by her example ”

Its moral is that we must consider, not single persons, but units of thousands of men and women, and whole industries rather than individual firms

Let us plan our economic and social reforms ; let us forge our Links of Empire on lines more colossal, and more humane than those conceived by our adversaries, —not bartering away the heritage from our forefathers, nor the legacy to our sons, of coaling stations and strategic and economic assets for the vague and uncertain advantages of internationalism (internationalism which nearly proved our undoing in the sixteenth and achieved nothing in the nineteenth centuries), but striving to live at peace with all men, devoting ourselves to the regeneration of the Empire and to the improvement of the condition of its peoples, and so of the world.

Finally, let us carry out the wise advice of our King, given many years ago, and follow that of the great statesman, to whom we largely owe the present loyalty of our Dominions beyond the Seas :

“ WAKE UP, ENGLAND ! THINK IMPERIALLY ! ”

## APPENDIX I

### A PROPOSED BRITISH WAR-COST REDUCTION PROGRAMME

THIS programme deals with measures grouped in the following order :

- I. Work for our returning sailors, soldiers, airmen and women war-workers, etc.
- II. The reduction of Red-tape in Government and Municipal Departments.
- III. Reforms affecting (a) the whole nation.
- IV. Reforms affecting (b) individual classes.
- V. Reforms in Education and Training :
  - (a) Consular Training.
  - (b) (1) Higher and (2) Elementary Industrial and Commercial Training.
  - (c) Training of Women.
- VI. Miscellaneous.

#### I. WORK FOR OUR FIGHTING MEN AND WOMEN WAR-WORKERS AFTER THE WAR (Chapter IX.).

These must not return to their homes to find their former posts held by foreigners. We owe much to our Allies and to not a few Neutral States, and it is but right that they should receive preferential treatment in varying degrees (*always after* our kinsfolk and fellow-subjects overseas). The following proposals should therefore be read in this sense :

A tax shall be levied on every firm employing foreigners, varying with the number of foreign employees, their nationality and that of the firm.

The Navigation Acts shall be revived against the enemy Powers.

Enemy Banks shall not maintain Branches in the Empire.

Other foreign banks must be under licence and control.

With exceptions : All German and German-Austrians and Hungarians (*a*) of the first generation shall be denaturalized and expelled (if below a certain age) after the war, except where they have married natural-born British subjects ; (*b*) shall not be allowed to adopt surnames of British or *Allied* origin.

All Railway, Shipping and Canal Rates, Harbour and other Dues, and Taxes which discriminate against, or otherwise operate to

the prejudice of, the ships, goods, commercial representatives or other persons of the Empire shall be met with countervailing and, where necessary, similar measures, with supercharges against the present enemy nations.

Low Tariffs and Imperial Preference shall be introduced. (See Chapter IX.)

## II. REDUCTION OF RED-TAPE IN GOVERNMENT AND MUNICIPAL DEPARTMENTS.

The placing at the head of a department of a successful business man, or any other drastic reform will not solve the problem. Organization is an exact science, which cannot be learnt by experience alone; neither can one man, occupied with running a department, possibly give the lengthy periods of time necessary to scientific reorganization.

A corps of organizers shall be formed (see Chapter XII.), consisting of one or more units. Each unit shall consist of approximately twenty persons, viz.: One Head of Section, two Professors of Psychology and Organization, two Chart and Diagram Designers, twelve Investigators and three Typists.

Attached to the corps will be suitable Architects, Civil, Electrical and Mechanical Engineering Experts.

One or more of these units will investigate the working of a department on scientific lines (*e.g.*, Taylor's method), observing the speed of circulation and volume of correspondence of the various offices, with a view to their regrouping, etc., if necessary. This corps will investigate all the great departments of State, and may then turn their attention to Municipalities.

### III. REFORMS AFFECTING THE WHOLE NATION.

#### A.—*Finance.* (See Chapters IX., X., XI.)

(1) The Charter of the Bank of England shall be modernized and the issue of Notes made more elastic (Chapter X.).

(2) The Banking and Financial Month and Year shall consist of 30 and 360 days respectively (Chapter XI.).

(3) The Decimal System of Coinage shall be introduced, with 1/240th of the present £1 as a basis (1 Imperial=10 Dekas=100 present Pence) (Chapter XI.).

(4) The Savings Bank shall be modernized, the interest being raised to  $3\frac{1}{2}$  to  $3\frac{3}{4}$  per cent. per annum, reckoned to the nearest working day (Chapter IX.).

(5) A State Mortgage Bank shall be founded to issue non-forecloseable loans with compulsory sinking funds. Mortgages thus

granted will be issued in the form of Drafts or Bills on the Bank, saleable all over England (Chapter XI.).

#### *B.—Co-operation.*

A State Central Co-operative Bank shall be formed, with a capital of £500,000 (rising as required to £5,000,000) (Chapters VIII., X.). This bank would lend, as a rule, to District and Local Lending Banks of the Raiffeisen and Schultze models (Loans on *Ability*, not on *Collateral Security*), for small farmers and business men.

#### *C.—Company Finance.*

It shall be compulsory for all companies to place five per cent. of the profits, before declaring a dividend, to the reserve, until that reserve attains one-tenth of the authorized capital of the company. The amount of depreciation permitted by the Government shall be drastically amended (Chapter XI.).

#### *D.—Patents.*

The *Patent Journal* shall be modified along the lines of the U.S.A. *Monthly Official Gazette*. The trial of Patent cases in the courts shall take place when possible before judges who are experts in the various branches of patents (Chapter IX.).

*E.—Town Planning Act.*

The operation of this Act shall be cheapened (Chapter IX.).

*F.—Land.*

Compulsory Deed Registration of Land in County Registries shall be introduced (Chapter X.).

*G.—Trading.*

Permission shall be now granted to employers to coalesce for the purposes of Regulating Trade, in the same manner as the Workmen. In order to prevent runous competition for the employer, and to increase the certainty of employment for the employee, no obstacles should be placed in the way of co-operation, either among the employers or the employed.

The probable modification in the near future of the Sherman Act (U.S.A.) will greatly facilitate American Export Trade, and, in consequence, increase competition in the world's markets.

*H.—The Relations of Masters and Men*  
(Chapter VIII.).

In order to promote closer relations between Masters and Men, all firms employing over three hundred persons shall hold a Council at least once a fortnight. This

Council shall consist of one or more of the Directors, the Works Manager, and delegates from each shop and from the body of foremen. The delegates are elected by secret ballot and absolute majority ; they must have been a given time in the firm's service, and may only be dismissed by the Board of Directors. This final clause is inoperative after an employee has ceased to be a delegate for six months. Time and a quarter shall be paid to the delegates if the councils are held after work-hours.

*J.—Architecture.*

This shall be made a closed profession (Chapters II., IX.).

*K.—Public Swimming Baths.*

Washing in a shower or other bath before entering the Swimming Pool shall be compulsory (Chapter IX.).

*L.—Public Houses.*

These shall be encouraged to sell non-alcoholic drinks and foods, and to provide music by suitable Tax Abatements (Chapter IX.).

**IV.—REFORMS AFFECTING THE VARIOUS CLASSES OF THE NATION, viz., AGRICULTURAL,**

**INDUSTRIAL, COMMERCIAL, LABOUR AND GENERAL.** (See also Chart.)

The figures and letters in the brackets refer to the preceding paragraphs of this chapter.

The various classes will benefit by the reforms described above as follows :

*A.—Agricultural.*

Taxing Foreigners, etc. (I.).

State Mortgage Bank (III., A, 5).

State Central Co-operative Bank (III., B).

Compulsory Deed Registration (III., F).

These will greatly encourage co-operation.

*B.—Industrial.*

Taxing Foreigners, etc. (I.).

Finance (III., A, 1, 2, 3, 5).

State Central Co-operative Bank (III., B).

Company Finance (III., C).

Patents (III., D).

Trading (III., G).

Fortnightly Councils (III., H).

Architecture (III., J).

*C.—Commerce.*

Taxing Foreigners, etc. (I.).

Finance (III., A, 1, 2, 3, 5).

State Central Co-operative Bank (III., B).

Company Finance (III., C).

Patents (III., D).

Trading (III., G).

Architecture (III., J).

*D.—Labour.*

Taxing Foreigners, etc. (I.).

Finance (Savings Bank) (III., A, 3, 4, 5).

State Central Co-operative Bank (III., B).

Town Planning (III., E).

Trading (III., G).

Architecture (III., J).

Public Swimming Baths (III., K).

Public Houses (III., L).

*E.—General (i.e., Upper and Professional Classes).*

The whole list, directly or indirectly.

**V.—REFORMS IN EDUCATION AND TRAINING.**

*A.—Consular Training* (Chapters III., IV.).

*B.—(1)* Higher Industrial and Commercial Education (Chapters II. and III.).

(2) Elementary Industrial, Commercial and Continuation Education (Chapter VI.).

*C.—Training of Women to become self-supporting* (Chapter VII.).

**VI.—MISCELLANEOUS.**

*A.*—Encouragement of existing, or foundation of new Bodies and Institutions (Chapter XIII.).

*B.*—A close relation between Church and State shall be maintained.

## APPENDIX II

### CHAPTER I

#### TECHNICAL UNIVERSITIES

#### THE WORKS OF THE FUTURE

THE era of "mixed" works dawned some years ago, and they will become the works of the future. Our consular reports from Frankfort O/M show the parlous state of the German "pure" works, due to the former's competition. When the "mixed" works increase in England, the same fate will overtake the "pure" concerns (*i.e.*, those not owning their own sources of raw material) on this side of the North Sea.

What have the university authorities done to meet these changed conditions? Practically nothing. Or do they consider that the English courses give any lectures equivalent to the numerous chairs on the above subjects at a German University? What training are they giving to the future engineers, who may ultimately hold in their hands the fate of vast concerns owning iron and coal mines, docks, canals, railways,

cableways, blast-furnaces, water-power stations, rolling mills, and erecting shops ? Can they maintain that our training is in any way to be compared with that given in Germany ?

We complain of the difficulties that beset a long theoretical course in this country. The Universities, I think, are largely to blame. Why do they divorce theory from practice, and grant degrees without insisting on at least one year's previous training in a factory ? Do they imagine that a few hours a week in the University workshop can be substituted for this ?

The University Degree must be given after a long *Practical* as well as *Theoretical* training, and should not be based on the results of the latter alone.

The Authorities may be afraid that if an engineer be not employed before he is twenty-five or twenty-six, he will find it hard to obtain a post, but modern conditions demand a more lengthy training than was formerly necessary. Let them state boldly what they *know* to be the irreducible minimum of instruction required. Compromise is at once the strength and the weakness of our race ; there must be none as regards Technical Education. The best is good enough for us should be our motto.

Of course it will be difficult to convince people.

#### SUBJECTS OMITTED AT ENGLISH TECHNICAL UNIVERSITIES

Neither the time-table at Darmstadt, nor at any German University, is filled to its full capacity with subjects necessary for the examination, as seems to be the case at home, and for two reasons. To avoid overtaxing the students, and to enable them to hear lectures that improve their general education, thus giving free play to the self-education, so much under discussion at the present time.

The German programme devotes in general more time to any given subject than does the English, and is therefore more thorough.

The following lectures given at Darmstadt do not appear to be part of the curriculum of Mechanical Engineering at one or other of our Universities.

As part of the four years' course we have :

Industrial Politics ; Principles of Law (contract, etc.) ; Factory Planning ; Machinery Planning ; Heating and Airing ; National Economy.

Then during the course it is recommended that the Lectures on—Literature and History ; Patent Law ; Protective Measures

against Accidents to Workmen, and other subjects should be attended.

Lectures are also held on—Socialism and the Workmen's Question ; Finance, Credit, and Banking ; National Income and the Formation of Classes.

In Germany, Classical and Technical Universities give the same standard of instruction, each branch co-ordinating its programmes of study. Full membership of the one admits to another. These are interchangeable, and large numbers of students avail themselves of this, to commence their course in one place and to finish at another.

Architects, Chemists, General, Civil, and Electrical Engineers take a four years' course. For Surveyors, this is reduced to one year ; while Pharmacists study two years.

*Only the man who has learnt the lessons of the past and what is going on outside his own country, can rightly judge the present and provide adequately for the future.*

The German has no use for the half-educated technical man. Evening schools for engineers (not workmen) and gentlemen-apprentices are unknown. He considers that to attend such classes when holding a post of engineer in a works as “ being in the lane instead of in the field.” He thinks that instead of taking a boy of eighteen, fresh

from school, and putting him through the shops, with evening classes in addition, it is preferable to engage a man of twenty-five or twenty-six with a thorough practical and theoretical training, who has very often a knowledge of modern languages and a personal experience of foreign nations and their customs. A well-educated man soon falls into the ways of the firm by whom he is employed and through his knowledge of other methods and wider outlooks on life is superior to the boy who has been through a long course in the shops before his mind is fully developed. *How can we expect our men who go through a three years' course to stand on the level of the German engineer, who receives a first-class education at his "Gymnasium" or "Realschule," followed by a year or more in the works, and four years or longer at the University? In many cases the German has spent some time abroad and has nearly always taken part in the numerous excursions and tours to the chief countries of Europe, which are arranged by his professors. In Germany at least, these tours might almost be dignified by the name of commissions, as the state and municipal authorities readily place themselves at the disposal of the organizers and give all the information and facilities required.*

## CHAPTER II

### HOW OUR APPRENTICES SHOULD BE TRAINED

THERE is no shutting our eyes to the considerable distrust of the results of Technical Education that exists in this country. The reverse is the case in Germany. The cause of this appears to be that, in England, the time given by the students, per week, is insufficient, that the classes are held at night, and that the theory is often not sufficiently closely allied to the practice. Now in Germany Technical Education in the Metal Trades is, broadly speaking, compulsory. Attendance at Technical Schools is required by law of all apprentices in industrial concerns, and for all youths under eighteen in commercial houses. Many Town and District Councils have extended this, through bye-laws, to all youths employed by the above. Where this is not the case, firms generally make attendance one of the conditions of entry into their service. The Heads of Departments frequently give lectures on their own subjects to the youths

and apprentices in their employ.<sup>1</sup> Large firms are allowed to have their own schools, if they conform to the Government standard. Classes are held not only at night, but also during the day, in some cases totalling eight to ten hours per week. Often, too, the boys are paid their full wage when the classes are held in the daytime. The Germans have realized that certain subjects can only be adequately taught when the lads' minds are fresh and active, which is never at the end of a long day's work.

According to a report from certain districts recently published, it is estimated that in the Heavy Trades the proportion of apprentices to youths under eighteen is about one to two or three. In spite of all the labour-saving machines now employed, the unskilled workman, who has only learnt enough to operate these mechanically, is not capable of coping with work of a higher nature, which continually presents itself. What is required of him is ability to read drawings, intelligence, and dexterity, but the demands on a skilled mechanic are far greater. Even in America, the land of labour-saving appliances, the need of properly trained apprentices has long been recognized. The number of skilled men required to supply the needs of the factories

continues to increase, and in Germany this has led to the large firms training the apprentices themselves, both practically and theoretically. It has been found that the apprentice trained in a factory is superior to the one who has learnt his trade at a locksmith's, as he has necessarily had more varied experience, and been under stricter discipline and has had the further advantage of learning to work on larger machines. Small firms have a tendency to educate their apprentices badly as they are prone to utilize them as extra hands.

A considerable number of firms have apprentice departments, but it has been found advisable that work in these departments should be carried on alternately with that in the shops, under the charge of an older man. This workman is either paid time-rate to teach the apprentice, or receives a bonus to compensate him for the time lost in his supervision. The indenture lasts, on the average, three or four years, with which is included a period of probation. Some firms insist that the apprentice remains a number of months in their employ, after completing his contract. In many cases the apprentices are paid a wage on a rising scale, during their training. *Several works retain as much as ten per cent. of these wages*

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*till the end of the indenture, when they hand it over to the apprentice, after deducting the fees for the Technical School, with four or even five per cent. interest. In cases of exceptional ability, a bonus is sometimes given in addition. This is to enable the young workman to make a start in life or to go abroad for a time to improve his mind, of which advantage is frequently taken.*

The following are some of the numerous firms who have instituted apprentice departments in connection with their own Technical Schools :

Deutz Gasmotorenfabrik, Mannheim ; Ildershutte (Steel-works) ; Danziger Waggonfabrik ; Lauchhammer Eisenwerke (Iron-works) ; Siemens and Schuckert-Werke, Nuremberg ; Siemens and Halske, A.G., Werner Werke, Berlin ; Hartmann and Braun, A.G., Frankfort O/M ; Elberfelder Farbenfabrik (Colour Factory), Leverkusen ; Dinglersche Maschinenfabrik, Zweibrucken, Pfalz (Bavarian Palatinate) ; Ludwig Loewe A.G., Berlin ; Werk-Nuremberg ; Maschinenfabrik Augsburg-Nuremberg.

Before concluding, I will give a short example of the method of training in an apprentice-department, followed by a continuation course in the shops.

The Imperial and State Shipyards and

Repairing Shops indenture their apprentices for four years. The latter acquire the necessary experience in the use of tools in an apprentice department during the first two years. They then spend four months in the Turnery, Smith's, and Waggon Repairing respectively. In the last year they are placed in the Locomotive Repairing Shop, or the like. They receive instruction in writing, drawing, German, calculation, and the Properties of Materials. They must undergo an examination at the end of their course.

#### GENTLEMEN-APPRENTICES

In the Congress on Engineering Education, held some time ago, speakers complained that gentlemen-apprentices were left too much to themselves in regard to gaining information on the work they had in hand, and further, that they were only able to interview the head of the factory with the greatest difficulty, and in some cases, not at all. Students from different parts of England, to whom I have spoken on this subject, fully confirm this opinion. Now how does this compare with German practice?

In the first place, the premiums asked

by German firms are infinitely smaller than those demanded here. I think that I can best illustrate this by giving the figures, which I paid in my own case.

Following a frequent custom, I worked with different firms engaged in the manufacture of Gas Engines, in General and in Electrical Engineering. In two cases I paid no premium as I had introductions to the Directors, in the other I was charged thirty shillings per month, which was ten shillings more than was asked of the German Students. At one time I was receiving three shillings per day as assistant-erector. In the factory, where I was a stranger, the engineer in charge (it was a large electrical works) introduced me to the foreman of the various departments as I entered them, and told them to put me on to the work which would be to my greatest advantage. I could interview this gentleman or the manager whenever I wished. Further, I was given a programme of work, which I modified according to the state of trade. There was no being left to "pick it up as best one could." I was not expected to attend a night school as I have seen some Englishmen doing, who are already holding high positions in works.

*The Germans realize that men who will ultimately hold responsible positions require*

*more careful training than do the average workman, and that the better educated the former are, the better the trade will be of the country as a whole, and of any firm who employs them in particular, as they will bring with them a broad outlook on the engineering world, and a mind trained to appreciate modern ideas, and capable of adapting itself to the ever-changing conditions of the present day.*

## CHAPTER III ,

### HOW FOREIGN STUDENTS OF ENGINEERING GAIN EXPERIENCE

THE following is a short account, by a former English student at one of the German Technical Universities, of a student's tour through the Ruhr district and East Friesland, undertaken for the purpose of studying the economic conditions and the system of canals and inland harbours that play so important a part in the industrial development of the German Empire. In the writer's case this tour was preceded by a visit to Krupp at Essen, of which a short description follows :

The aim of this article is not to give a description of the places visited, but to show the facilities granted to German students for obtaining an insight into the industrial undertakings of their country.

During the vacations, the German Universities arrange tours for professors and students to visit exhibitions, foreign coun-

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tries, industrial undertakings. Students at any University are allowed to take part in these expeditions. In the present case, the party consisted of some twenty students of Civil Engineering and of National Economy, under four professors, while the excursion was of ten days' duration.

Thanks to an introduction from a member of our Diplomatic Service, I was able to obtain permission to visit the Essen Branch of the famous Krupp Works. At nine a.m. on a beautiful summer's morning, I presented myself at the spacious portals of the vast offices of the firm, and was ushered into a luxurious waiting room, where I was soon joined by my guide, an ex-officer of the German Army. A landau and pair had been placed at our disposal, and we drove from workshop to workshop, through which my new acquaintance conducted me. We visited the museum, where I was shown working models of heavy artillery and ammunition hoists. We then drove through the firm's famous workmen's colony, to the garden-city, where their pensioners and families retire to end their days. We inspected the handsome hospital, lying in well-laid-out grounds, and afterwards continued our drive through picturesque woods down to the river, where lies the pretty club

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house, belonging to the higher officials of the firm. On our return to the town, I was entertained to an excellent lunch at the first-class private hotel, maintained by Krupp for the use of their guests. The next day I joined the students' party.

Arriving at Duisburg at ten a.m., after a short rest we took the train to Hamborn, Germany's latest "city," of mushroom growth. We were received at the Town Hall, and ushered into the Committee Room, where the various heads of Departments were awaiting our arrival. Each of those gentlemen described the work and scope of their respective sections. They gave us details as to the schools, etc., the different classes of workmen's dwellings and co-operative stores belonging to the works owned by the Thyssen family. This firm owns its own coal-mines, blast furnaces and steel works, with extensive docks and cranes on the Rhine, besides a fleet of ore-carrying steamers.

After a lunch in the Ratskeller, or Restaurant, under the Hamborn Town Hall, we visited a workmen's colony, under the guidance of a Town Councillor, who placed a tram-car at our disposal. The houses, semi-detached and provided, for the most part, with gardens, were artistically de-

signed, while the streets were often laid out in curves. We also went over the municipal slaughter-house, at that time still under construction. We then inspected a new dock on the Rhine.

The next day we were shown the mechanism of two swing bridges at the docks, which were operated for our benefit. The harbour authorities had placed a launch at our disposal, in which we then embarked, and were taken about the harbour and down the Rhine, to note the various types of quays and electric loading arrangements in use on the wharves. We then inspected them from the land side. After lunch, we visited the Shipping Exchange and the canal then under construction, which now joins Duisburg to Emden.

The following morning we left for Herne, where a canal launch, lent by the authorities, with an engineer in charge, was awaiting us. We visited the famous lift-lock at Heinrichenburg, which was worked for our inspection. We were also shown over the new lock then under construction, which now acts as reserve in case of accident. We continued our voyage through lovely country, stopping on the way to inspect a pumping station which draws water from

the River Lippe to supply that lost by leakage and evaporation on the canal. We left the launch at Ludingshafen and took the train to Leer, staying a few hours at Munster en route.

Leaving Leer at six-thirty next morning, we travelled by a light railway to a station some twenty miles distant, and then drove about six miles through delightful Irish-looking scenery to our destination, an electric power station. This was situated at Wiesmoor, in the middle of what had once been a bog. The State, who owns the greater portion of bog-land in Germany, is reclaiming it by digging a canal, which will, when completed, drain into the Wilhelmshafen-Emden Canal, at present being widened to allow of its taking destroyers. The Siemens Electric Company have erected the power station and supply Emden with light and power for the trams and docks.

After lunch, we left for Emden, where we spent the night. On the following morning we took the tram to the harbour, where we were met by two engineers of the Harbour Board, who showed us the loading arrangements and works under construction. In the afternoon we were taken about the harbour in launches belonging to the authorities, and shown over the repairing

yard, for light-ships ; we also visited a dredger and a lock. Later in the evening we left for Wilhelmshafen.

The following day was spent in a visit to the Naval Dockyard, from which I, as an Englishman, was excluded. The same evening we left for Bremen. The next day (Sunday) we visited the town, including the fine Town Hall and museum.

The following morning we were taken to the Statistical Office, where the Director gave us an account of the history and growth of the town, with a description of the difficulties which had to be overcome when canalizing the River Weser.

We then visited the docks and a modern coffee-factory ; we were received by the manager, who took us over the establishment. In the afternoon we inspected the Weser Shipbuilding Yard, of considerable importance. We then left for Geestemunde (Bremerhaven).

The next morning, the last day of the tour, we rose at five-thirty, and taking the ferry across the harbour, were present at a fish auction. We then inspected a fish-curing factory. After an excellent fish breakfast at a restaurant, the writer took leave of the other members of the expedition, as they were about to visit the docks

of the Norddeutscher Lloyd, whilst he was returning to London by ship from Bremen.

On the voyage home it was impossible to avoid comparing the docks and loading arrangements in Bremen, with those in the vicinity of the Tower Bridge, a comparison, unfortunately, very much to the disadvantage of the latter.

*The impression created by such a tour, giving, as it does, a unique opportunity for studying German methods of administration and business, can hardly be expressed in a few words. One is amazed at the immense scale on which things are undertaken, at the extensive scheme of improvements, as well as at the naval expansion which shows here and there beneath the cloak of economic progress.*

*It would be interesting to know whether students of Economy or Engineering in England enjoy the same facilities as do their German confrères for acquiring knowledge at the hands of the State and Municipal bodies.*

## CHAPTER IV

### HOW WE COULD DEVELOP FRESH HOME MARKETS

#### THE RECLAMATION OF PEAT BOGS

THE following reflections are the outcome of a tour, extending from Duisburg on the Rhine to Emden on the North Sea, in which the writer took part, when studying at a German Technical University. Every consideration was shown by the State Authorities to the members of the expedition, and all the necessary information was readily placed at our disposal.

The Germans, by reclaiming the peat bogs near Emden and by constructing an electric power station on the site, have raised the purchasing power of the district and hence have acquired fresh markets for their manufacturers.

The bog land in the neighbourhood of Wiesmoor, between Emden and Wilhelms-hafen, is some 25,000 acres in extent.

This area is being reclaimed by the State,

and a portion of the dry soil has been in the hands of the peasants for some years. The greater part of these 25,000 acres, however, is still unfit for cultivation, and can support but a few cattle.

In order to drain off the water, a canal has been dug, running into the Wilhelms-hafen-Emden Canal (which is at present being widened to take destroyers).

Along this canal the bog is reclaimed, and allotments in long strips, with a frontage to the waterway, are sold to the peasants on easy terms.

At Wiesmoor the Siemens Electric Company have erected a power station, from which they supply Emden with some 6,000 H.P., for lighting purposes and for the trams and docks. Dried peat forms the fuel for the boilers at the station. The "turf" is cut with electric-cutting machines and electric light railways transport it with a minimum of cost.

The bog-land is drained by means of earthenware pipes running up from the canal; it was found unsuitable to use open trenches.

Two methods are used for making the soil productive: the first is to lay the pipes aforesaid; the surface is ploughed with electric ploughs to the depth of a foot or so,

and the soil is then fertilized with chemical manure. Two or three grass crops are taken off the land, which is excellent for pasture, and it is then offered for sale to the peasants. This procedure enables more head of cattle to be raised than before the reclamation took place.

The other method, which would take too long, if applied to the whole area, is to cut the peat down to the bed rock (sand), dry it, and use it for fuel. Lime and chemical manure are then mixed with the sand ; this soil takes about fifteen years to become productive, and is better suited for cereals. The turf is cut (electrically) during three months of the year, dried in small heaps, and stored.

One is much struck at the prosperity of the peasants in this part of Germany (East Friesland), due largely to the Raiffeisen Landbanks.

The roads, of long and flat bricks, have an excellent surface. The country has a delightful Irish look about it, with healthy, English-featured inhabitants. The fields, of large size, are surrounded with hedge-crowned mounds and ditches. The farmsteads, often surrounded with trees, have a prosperous look, with their high roofs of tiles with thatching between. A curious

feature of these farm houses is that the stables and living-house are often under one roof, the latter lying to the windward of the former from the prevailing winds.

The complete reclamation of this bog will take some fifty years.

### CONCLUSIONS

We have seen what the reclamation of the German peat bogs brings with it : an increase in the area under cultivation as well as improvement in the quality of the soil ; more work of a regular kind and the extension of commercial enterprise of a satisfactory character.

What would it not mean to our manufacturers, if we took in hand the reclamation of some of the peat deposits in the United Kingdom ? What an increase in all trades it would bring ! It would provide permanent employment for thousands of our skilled and unskilled workers, and would benefit the manufacturers of electrical, agricultural, railway, and civil engineering plant, etc., in a manner that would surpass our most sanguine flights of imagination. That is provided our tenders, government and municipal, bore the words, " No foreigners need apply."

We hold a great advantage over Germany. She has already advanced far along

the road towards exploiting economically her forests, canals, and peat bogs, while in this matter we touch practically virgin soil.

*By reclaiming some of the Irish bogs, canalizing the rivers, and founding electric power stations driven by peat fuel, we should solve the Home Rule question by bringing life and prosperity to many an Irish cabin and to many an English workman, and at the same time make it economically possible to construct an up-to-date harbour at Galway with an electric railway running direct to Dublin, and thus draw into closer communication with the Mother Country many portions of the King's Dominions beyond the seas.*

## CHAPTER V

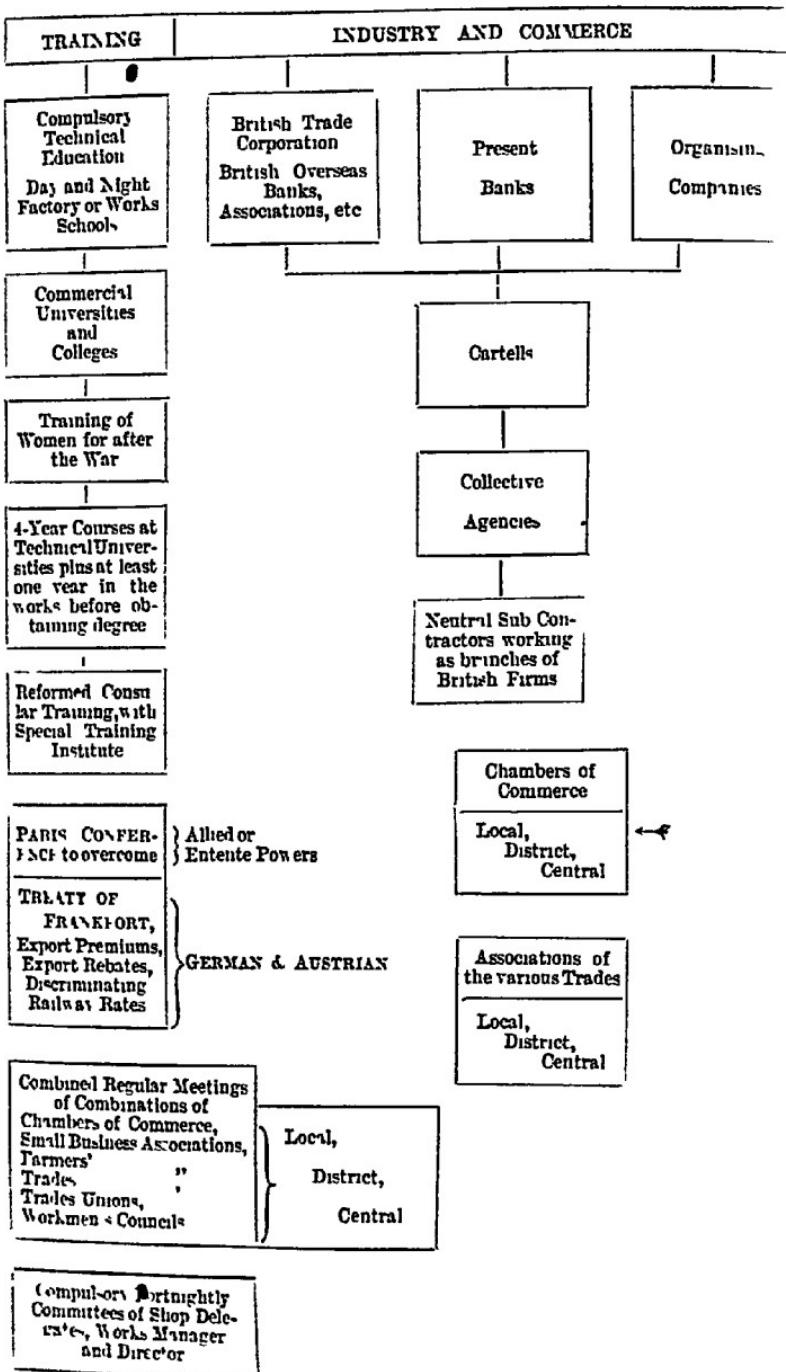
### A WARNING

#### IRON-MINES AND FOREIGN POLICY

ALL industrial States are dependent on raw material for their national prosperity, and even existence. Germany is the second iron-producing country of the world, the United States being the first, and ourselves third. In 1912, Germany produced 17.8 million tons of raw iron, and her rate of increase thereof is the largest in the world. The striking feature in her iron industry is the decline in the production of "Acid" or "Bessemer" iron, and the rise of that of "Thomas (Gilchrist)" or "Basic" iron. The former is now only 2.2 per cent., while the latter has risen to 63.84 per cent. of the whole. Germany, as is well known, has ample supplies of coal, but relatively little iron. She imported in 1912, 12.12 million tons of iron-ore, of which 3.73 came from Spain, 3.88 from Sweden, and 2.69 from France, the rest came largely from Russia

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